

MILITARY MEDICINE

ORIGINAL ARTICLES

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The Public Health Council of Okinawa—A Pathway to a Coordinated, Fruitful, Tri-Service Preventive Medicine Program

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(With four illustrations)

ESTER morning 0800 hours, 1 April 1945, was H hour, D day for the invasion of Okinawa, the Japanese Pacific stronghold. It was also the initial event that led to the necessity of a coordinated, tri-service preventive medicine program on that island. At that time two Army and two Marine Divisions made the amphibious assault landing across adjacent beaches on the West coast of Okinawa and quickly established a beach-head bisecting the island. Two air fields, which had been quickly occupied, were placed into operation as soon as possible by the Tactical Air Force. Approximately twelve weeks later, the combined

interservice effort brought forth the Japanese capitulation; however, the cost in American lives was high for all services, with the greatest loss occurring among supporting Naval personnel.

Shortly after the battle, the Army was assigned full control of the island and established a Military Government. Three years later the Army Air Corps was redesignated as the U. S. Air Force and thus became a full fledged sister service. Then, in 1952, the Government of the Ryukyu Islands was created, at which time the military government under Army aegis was transformed into a civil affairs administration. In 1955, advance elements of the Marine Division were stationed on Okinawa and shortly thereafter the Naval garrison, which had been relatively small, began to increase in size. Thus a uni-service administration for the island slowly evolved into a multi-service affair, working closely with a civil affairs administration and the quasiautonomous Government of the Ryukyu Islands.

Many reasons have existed to make a tri-service health council imperative. Okinawa is presently recognized as "The Keystone of

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FIG. 1. Okinawa with relation to other points in Far East.

the Pacific," since it is so located and has been so developed that it is one of the principal U. S. military bases of the Western Pacific (fig. 1). This island, the major island of the Ryukyus chain, is about 75 miles long and from 2 to 12 miles wide with a subtropical climate relatively comparable to that of Florida—with a high annual rainfall and high relative humidity.

A sizable Armed Forces population is domiciled on the island in several American-type communities sandwiched between Ryukyuan villages. A relatively well-developed highway net makes all of the Armed Forces areas and the majority of the commercial and rural Ryukyuan areas readily accessible. Americans freely frequent local villages and towns and are in close association with the Ryukyuan population, which is predominantly of Japanese descent, as reflected in their physiognomy and culture.

Thus, personnel from the Army, Air Force, Navy, Marines, Coast Guard and the State Department, the dependents of all these groups, Department of Defense civilians and their families, U. S. contractors and certain American wholesalers and retailers all reside in close proximity with each other, and with the Ryukyans. The plan for obtaining a coordinated solution to the health problems involving all of these groups is the subject of this paper.

The majority of the Armed Forces personnel on Okinawa live in the lower third of the island. The native population of about 600,000 is more widely dispersed, but they, too, are also concentrated on the lower third of the island, with essentially 80% of the Ryukyuan population settled on the southern plains, whereas only 20% is located in the more mountainous and arid regions north of the Ishikawa neck (fig. 2).

Naha, the capital city, is located near the southern tip of the island, adjacent to two natural ports, one of which has been developed into a sizable port facility for heavy shipping, and the other into a facility for lighter ships plying between Okinawa and Japan. White Beach is the only other port facility on the island for heavy shipping. Needless to say, in support of the U. S. Armed Forces and the Ryukyuan population, a heavy shipping schedule is maintained by vessels flying the flags of almost all non-Communist nations, and coming from essentially all ports in the "free areas" of the world.



FIG. 2. Okinawa.

Preventive medical coverage for the Armed Forces communities is provided directly by the Command Surgeons of each of the military services concerned. The Ryukyuan communities are furnished these services directly by the Department of Social Affairs, Government of the Ryukyu Islands, with the guidance of the Public Health and Welfare Department of the United States Civil Administration of the Ryukyu Islands (hereafter called USCAR). The Armed Forces communities on Okinawa are subject to all the usual health hazards of any contemporary American town, but in addition include many that are unique to the situation of an American community in the midst of an Oriental culture.

Communicable disease control is of paramount importance. Though much progress has been made and is continuing to be made, off-base environmental sanitation still does not meet desired standards and constitutes a threat, especially as a potential source of enteric diseases (e.g., dysentery, diarrheas, hepatitis and parasitic infestation). Because of the irrigation practices and the geography of Okinawa, there is an abundant mosquito population; hence malaria, dengue and encephalitis are all potential hazards. Of these three, Jap B encephalitis presently poses the greatest threat since in the last five years a superb residual spraying and larvaciding program has essentially eliminated both malaria and dengue. Jap B encephalitis produces a high endemic rate in service personnel (approximately 20 to 100 times that of the annual attack rates for arthropod-borne encephalitis in the state of California, 1954 to 1956), and poses a genuine problem to troops in the field. Surveys indicate that tuberculosis infection among the native Okinawan population is approximately 30 to 40/1000, compared with the U. S. rate of 0.45 to 1/1000.

Several thousand Okinawans work for the various U. S. Government agencies on the island, and many more thousands are employed as private domestics. This high rate of tuberculosis infection among the indigenous population is a hazard to the Americans stationed there; and is, of course, of grave

concern to the Government of the Ryukyu Islands because of the important social and economic consequences to the Okinawans themselves.

When there are large numbers of troops stationed in an exotic environment, venereal disease is apt to be a problem to the command staff and to the medical authorities. Okinawa is no exception and one of the preventive medical problems of perennial concern is that of venereal disease control. Respiratory outbreaks of streptococcal pharyngitis and influenza have plagued both troops and local inhabitants during the last two years. Strenuous efforts have been taken to minimize the complications of these diseases.

Food and environmental sanitation are also major public health projects on Okinawa, both within the military establishment and in the local communities. This necessitates an educational enterprise aimed at helping the business or agency concerned recognize the hazard and rectify the danger. For this purpose, in order to protect military personnel, the routine inspection and approval of approximately 700 approved Ryukyuan bars and restaurants is accomplished, in addition to inspecting routinely military food facilities, barber and beauty shops, dependent schools, public buildings, troop billeting and latrine facilities, swimming pools, water treatment methods, sewage and refuse disposal methods, and off-post private housing. Special studies such as school lighting surveys and shoreline pollution investigations are accomplished when needed.

Minimizing the adverse effects of a hot, humid environment and of disease hazards, as they have been briefly mentioned above, is a problem for the preventive medicine personnel presently stationed on Okinawa. This is a stimulating challenge, and it is obvious that any successful preventive medicine program on a small island where so many small, relatively independent groups live side by side in one crowded area, must be supported by all the preventive medicine or public health agencies concerned, working together as a team and with command authority. Without proper interservice cooperation,



FIG. 3. Membership Certificate, Public Health Council of Okinawa.

much desultory effort would be expended by the different agencies culminating in waste, friction, frustration and meager results.

The Public Health Council of Okinawa (copy of membership certificate fig. 3) was organized as the agency whereby repetition, frustration, and jurisdictional disputes could be held to a minimum. It promotes friendship, cooperation and coordination of the efforts of all concerned. Its purpose, as stated in the combined command directive (Army, Navy, Air Force and Marine), dated 17 October 1955 is: "To provide a medium for an interservice presentation and discussion of the communicable diseases and vectors of communicable diseases affecting the health and welfare of the Armed Forces located in the Ryukyu Islands, and further, to make recommendations for their control." The scope of this Council has been broadened recently, to include all factors which adversely affect the physical, mental and social well-being of the Armed Forces population on the island.

The Okinawa Public Health Council is composed of the following officials and/or their representatives (all other interested personnel are welcome):

1. *United States Army, Ryukyu Islands*

- a. Surgeon (Commanding Officer, U. S. Army Medical Service Group)
- b. Chief, Preventive Medicine Service
- c. Chief, Veterinary Service
- d. Sanitary Engineer, Preventive Medicine Service
- e. Chief, Entomology Division, Preventive Medicine Service
- f. Public Health Nurses, Preventive Medicine Service
- g. Commanding Officer, Ryukyus Army Hospital (RAH); the only military hospital on the island, supporting all Armed Forces personnel
- h. Chief, Medical Service, RAH
- i. Chief, Neuropsychiatric Service, RAH
- j. Chief, Surgical Service, RAH
- k. Chief, Outpatient Service, RAH

- l. Chief and Asst. Chief, Laboratory Service, RAH
- m. Officer in Charge, Communicable Disease Ward, RAH
- n. Dental Surgeon
- o. Dental Surgeon for each Army dental dispensary
- p. Surgeon, USA Composite Service Group
- q. Port Surgeon
- r. Provost Marshal, U. S. Army Military Police Group and Ryukyus Armed Services Police
- s. Entomologist, U. S. Army Engineer Group RYIS
- t. Chief, Asst. Chief, and Chemist, Sanitation Section (Water & Sewage), USA Engineer Group
- u. Command Safety Director

2. 313th Air Division (U. S. Air Force)

- a. Surgeon
- b. Preventive Medicine Officer, Kadena Air Base
- c. Surgeon, Naha Air Base
- d. Veterinarian, Kadena Air Base
- e. Veterinarian, Naha Air Base
- f. Officer in Charge, Base Operation Aerial Spray Section, Kadena Air Base
- g. Officer in Charge, Base Operation Aerial Spray Section, Naha Air Base
- h. Dental Surgeon, Kadena Air Base
- i. Dental Surgeon, Naha Air Base

3. 3d Marine Division (U. S. Marine Corps)

- a. Division Surgeon
- b. Regimental Surgeons and all Battalion Surgeons
- c. Commanding Officer, 3d Medical Battalion
- d. Preventive Medicine Officer
- e. Camp Maintenance Officer
- f. Officer in Charge, Insect and Rodent Control

4. Naval Air Facility, Naha (U. S. Navy)—Surgeon

5. United States Civil Administration of the Ryukyu Islands

- a. Director, Public Health and Welfare Department

- b. Preventive Medicine Officer
- c. Sanitary Engineer
- d. Public Health Nurse
- e. Sanitarian
- f. Veterinarian

6. Government of the Ryukyu Islands

- a. Director, Department of Social Affairs
- b. Chief, Preventive Medicine Section
- c. Chief, Medical Care Section

7. Taiwan Patrol Force—Surgeon

8. Okinawa Engineer District—Safety Officer

The officers of the Council consist of a chairman and a secretary. The senior military member acts as the chairman; and the Chief, Preventive Medicine Service, U. S. Army Medical Service Group, is the permanent secretary who maintains the minutes of the meetings. These minutes, containing the recommendations of the Council, are forwarded to the various command authorities concerned.

Meetings are held at monthly intervals; and during its brief history, a valuable and sizable body of literature concerning the preventive medical problems of Okinawa has been accumulated. Each meeting opens with an informal review of current morbidity and mortality statistics for all services on the island, during which there is a limited open discussion of the problems incurred along with the control methods utilized. Then the meeting is turned over to a more or less formal presentation and discussion of a particular preventive medical subject of current interest, usually related to problems currently being encountered on Okinawa. The wide scope of papers, from Mass Casualty Disaster Exercises, New Hospital Construction, Water Fluoridation, Caisson-Disease, Aerial Spraying, Accident Statistics, Prevention of Rheumatic Fever, to Rabies Control is of special interest.

The Council meetings are essentially professional seminars, providing continuing professional stimulation and training in addition to being a forum for discussing current prob-

PREVENTIVE MEDICINE

SERVICE

(U.S. ARMY MEDICAL SERVICE GROUP, RV18)

CHIEF, PREVENTIVE MEDICINE SERVICE

SECRETARY, PUBLIC HEALTH COUNCIL

TRI-SERVICE MEDICAL STATISTICS
EPIDEMIOLOGICAL STUDIES
IMMUNIZATIONS
PHYSICAL STANDARDS
HEALTH EDUCATION

ENVIRONMENTAL SANITATION DIVISION

INSPECTIONS

MILITARY & CIVILIAN OPEN MESSSES
MILITARY EXCHANGE & CONCESSIONS FACILITIES
MILITARY & COMMERCIAL ICE PLANTS
COMMERCIAL FOOD & ESTABLISHMENTS
MILITARY BARBER & BEAUTY SHOPS
AMERICAN DEPENDENT SCHOOLS &
SWIMMING & RECREATIONAL AREAS
TROOP BILLETING, BIVOUAC & RANGE
FACILITIES
MILITARY PUBLIC BUILDINGS
PRIVATE HOUSING APPROVAL

ADVISORY

TREATMENT & DISTRIBUTION
GARBAGE & REFUSE COLLECTION & DISPOSAL
NEW CONSTRUCTION
MISC. SANITARY ENGINEERING PROBLEMS

LIAISON

ARMY STAFF SECTIONS
SUPPORT OF THE AIR FORCE MARINE
CORPS & NAVY
JETERINARY & ENTOMOLOGICAL ACTIVITIES
MAIL AIR & UICAR
OKINAWA PUBLIC HEALTH COUNCIL

SPECIAL ACTIVITIES

BEACH AREA SURVEYS
EPIDEMIOLOGICAL STUDIES
HEALTH EDUCATION
SHIP SANITATION
TRAINING & COMBAT UNIT INSPECTION
WINTER SAMPLE COLLECTION

ENTOMOLOGY DIVISION

SURVEY

ENTOMOLOGICAL SURVEY
STATISTICAL EVALUATION OF SURVEYS &
DISSEMINATION OF DATA TO CONTROL
AGENCIES
RODENT SURVEY
SPECIES IDENTIFICATION
COLLECTION OF SPECIMENS FOR VIRUS
FLIGHT RANGE STUDIES
PROVIDE TO DEPARTMENT OF DEFENSE
LABORATORIES
ENTOMOLOGICAL DATA

LIAISON

CO-ORDINATION OF INSECT & RODENT
CONTROL IN COMBATA
CO-ORDINATION OF TRI-SERVICE ASPECT OF
RODENT CONTROL COMMITTEE OF PUBLIC
HEALTH
SPECIAL ACTIVITIES
MAINTAIN DISPLAYS OF LIVING ENTOMOLOGICAL
SPECIMENS & PREPARED NATURAL
HISTORY COLLECTION
LECTURES & DEMONSTRATIONS ON INSECT
& ANTHROPOPO OF MEDICAL IMPORTANCE
DIVISIONAL TRAINING PROGRAM

HEALTH SERVICES DIVISION

ARMY HEALTH NURSE BRANCH

SPECIAL ACTIVITIES
POSTPARTUM COUNSELING
HOME VISITS TO POSTPARTUM & NEWBORN
MOTHER-BABY CLASSES
WELL-BABY CLINIC PROMOTION
GUIDANCE TO PARENTS OF PREMATURE
TUBERCULOSIS REGISTERS & HOME INFANTS
OUTPATIENT CONSULTANT SERVICE
HOME VISITS FOR SPECIAL CASES
SELECTED BY DOCTORS
SUPERVISES SCHOOL HEALTH PROGRAM
CURRICULUM DEVELOPMENT & INSTRUCTION
IN HEALTH EDUCATION

PROMOTES

SCHOOL LUNCHROOM PROGRAM
ADULT EDUCATION COURSES
SOUND SCHOOL-HOME RELATIONSHIP

LIAISON

AMERICAN RED CROSS
NURSE-TEACHER WORKERS
PARENT TEACHERS ASSOCIATION
CIVILIAN CLINICS
COMMUNICABLE DISEASE CONTROL BRANCH
CONTACT INTERVIEWING & TRAINING FOR:
TUBERCULOSIS
POLIO
DYSENTERY
INF. HEPATITIS
MALARIA
INF. MONONUCLEOSIS
OTHER COMMUNICABLE DIS.

INVESTIGATIVE THERAPY BRANCH

SPEECH THERAPY
SPEECH EDUCATION
PHYSICAL EXAMINATION BRANCH
TUBERCULOSIS SCREENING
IMMUNIZATIONS

PORT QUARANTINE DIVISION

SHIP QUARANTINE

LIASION ACTIVITIES FOR SHIP QUARANTINE
QUARANTINE INSPECTIONS FOR INCOMING SHIPS
MEDICAL CLEARANCES
MEDICAL CLEARANCES FOR DEPARTING
PERSONNEL
SANTARY INSPECTIONS
MILITARY SHIPS IN LOCAL TRAFFIC
RECOMPRESSION CHAMBER

FIG. 4. Functional Activities Chart, Preventive Medicine Service, U. S. Army Medical Service Group, RV18.

lems for which administrative decisions are necessary.

The Preventive Medicine Service, USA Medical Service Group (previously the Preventive Medicine Division of the Surgeon's Office, U. S. Army, Ryukyu Islands) has been the coordinating activity in preventive medicine among military services and USCAR, as the chief of that service is the secretary of the Council, has close relationships with the various services of the only military hospital on Okinawa and is readily available to offer assistance of specialty personnel (a Sanitary Engineer, Entomologist, Health Nurse and Epidemiologist) and statistical information. The chart of functional activities of the Preventive Medicine Service (fig. 4) gives an indication of the diversified projects and programs under the supervision of the chief of that service. Although the other military services, GRI, and the Public Health and Welfare Department, USCAR, have somewhat similar preventive medicine programs, the activities of the Preventive Medicine Service of the U. S. Army Medical Service Group have been selected for detailed discussion since these provide an excellent means for introducing and demonstrating interservice coordination and cooperation.

All cases of active tuberculosis discovered among Armed Forces personnel are isolated at the Ryukyus Army Hospital. During their hospitalization a thorough contact history is acquired from the patient to ascertain all intimate contacts for source of infection and possible spread. All contacts of Army tuberculosis patients are then traced and referred to Army medical facilities for workup—X-ray immediately and three months later for adults, and tuberculin testing for children. Intermediate PPD (0.0001 mg) is used intradermally at the time of contact tracing for all youthful contacts without a history of a previous positive tuberculin test, and again six weeks later providing the original test was negative. Children with a positive PPD receive the same X-ray routine as for adults. Air Force and Navy/Marine patients are also interviewed while in the hospital and the

contact information derived from these patients is transmitted by telephone, and later by informal report, to the contact tracers of the sister service involved. The military service receiving this information has a similar tracing program.

Disease outbreaks on the island are given a thorough epidemiological evaluation by the surgeon of the service involved, sometimes in consultation with the Army epidemiologist, so that the causative factors can be ascertained and control measures initiated. All individual cases of unexpected communicable disease, amebiasis, bacillary dysentery, infectious hepatitis, malaria, encephalitis, poliomyelitis, tuberculosis, infectious mononucleosis, rheumatic fever, acute nephritis, and venereal disease are registered and investigated as to source and possible spread.

All cases of malaria in any Armed Services personnel are reported by the Hospital Laboratory Service to the Preventive Medicine Service and are carefully questioned by Army contact interviewers to ascertain the most likely locality where the disease was acquired. Thus, the Preventive Medicine Service is able to pin point the source, quantitate, and register all new cases of malaria acquired in military personnel on Okinawa, in an area where malaria has been eradicated.

All American patients with infectious hepatitis are interviewed for any possible common source of infection and to ascertain if any family contact has occurred. Family contacts of Army patients are advised to report to the Hospital Outpatient Department for evaluation for possible passive protection against the disease with gamma globulin. Contacts of Air Force patients or Navy or Marine patients are advised by the Army contact interviewer to report to the supporting medical facility of that particular service. Concurrently the medical personnel at that dispensary are notified that the individual involved is being referred for evaluation.

An effort is being made to acquire additional information concerning the source and spread of Jap B Encephalitis on the island. Cases from all of the services are inter-

viewed by the Army contact interviewer so that satisfactory epidemiological evidence can be acquired concerning this disease.

Patients with venereal disease from any of the military services are interviewed at the Armed Forces dispensary treating the case, and then all identifiable female contacts are traced by the tri-service contact tracing team. These contacts, once located, are then referred to the Government of the Ryukyus Health Center where they are routinely given penicillin or other antibiotic therapy, based upon epidemiological evidence and clinical findings—a control program not only closely coordinated between the services but also with USCAR and GRI.

Each of the military services has had a continuing X-ray screening program for diagnosing tuberculosis among all Okinawan employees—servants, gardeners, typists, and others, in intimate contact with Armed Forces personnel or dependents. The Army has had this program in progress for at least five years. It has been accomplished at the Ryukyus Physical Examination Branch at the Army Hospital. The program encompasses not only tuberculosis screening through pre-employment and annual or semi-annual X-rays, but also provides by means of immunizations, some protection against smallpox and typhoid. Ryukyuan employees hired by the Marines are processed through the Army facility. The Air Force has an X-ray unit installed in a trailer for screening their employees, with a program quite comparable to that of the Army.

The Environmental Sanitation Division, Preventive Medicine Service (fig. 4), is supervised by a Sanitary Engineer. This activity is jointly staffed by both Army and Navy enlisted technicians who work in teams of two, inspecting all facilities with possible sanitary health hazards on Army installations and also 700 off-base Okinawan food and beverage facilities which meet acceptable tri-service standards so that they may be patronized by Armed Forces personnel. Men on these joint service inspection teams are chosen for their high moral character, ability

to meet both the American and Ryukyuan public, and proficient knowledge of the field of sanitation.

The Entomology Division is administered by an Entomologist, who attempts to coordinate the insect and rodent control activities of the various military services, USCAR and GRI. This Division maintains and furnishes almost daily to each of the Air Force, Marine, GRI and Army control agencies data on up-to-date surveillance of species, abundance, distribution and biology of the medically important arthropods, and other animals on Okinawa. This is absolutely essential to enhance the effectiveness of our tri-service disease control measures. Routine mosquito larval surveys, insecticide resistant studies, adult mosquito surveys, rodent surveys, colonization attempts for *Culex tritaeniorhynchus* (the vector of Jap B encephalitis in Japan), and an attempt to determine the mosquito vector or vectors of Jap B encephalitis on Okinawa, in addition to solving special entomological problems continually arising, are accomplished all as component parts of this activity. The personnel of the Entomology Division have frequently been supplemented by Navy personnel working with the Army as a team.

An active school health program in the five schools for Armed Forces dependent children is being coordinated by the Army Health Nurse, Chief of the Health Services Division. Each dependent school presently has a school nurse with three Army school nurses and two Air Force Nurses. The overall school program includes annual immunizations; tuberculin testing of all pupils along with treating with isoniazid all identified tuberculin converters so as to control or eradicate early tuberculosis infections; vision and auditory testing; a dental survey and therapy program; a speech screening and correction program; and an active health educational program, all for approximately 3,000 children. In addition, each child entering the first grade is given a comprehensive physical examination by the Army, Air Force or Navy Medical facility directly responsible

for the medical treatment and care of that child. Medical and dental abnormalities noted are treated at the time of the examination, or referral appointments are given. The teachers in the second to twelfth grades of the school system have been instructed through frequent nurse-teacher conferences to select and refer to the nurse all children who appear to be handicapped or physically abnormal. The school nurse then by means of consulting, advising and frequently prodding the parents, assures that the child is taken to the appropriate specialty clinic. Thus a definite diagnosis is made and appropriate therapy is administered. This teacher screening system has been exceptionally efficient in locating children in need of medical assistance. Because of the comprehensive student health records, the school nurses have been able to follow the course of each child referred, to assist all concerned, and to ascertain the results on those referred. A markedly high percentage of all defects discovered are remedied.

The Quarantine Division of the Preventive Medicine Service (fig. 4) is administered by the Naha Port Surgeon. All ships, military and civilian, must accomplish appropriate quarantine processing before or upon entering Okinawan ports so that the importation of communicable human, animal or plant diseases will be minimized. Large ships on international voyages are processed or inspected by this Division prior to docking at the Army posts; whereas the lighter, smaller ships are processed similarly at the other smaller Ryukyuan ports by personnel from the Quarantine Division, Government of the Ryukyu Islands. All international military air traffic is under the quarantine control of the base surgeons of the large Air Force bases where these planes must land, and commercial traffic is supervised by

agents of the Government of the Ryukyu Islands. Generally the overall quarantine program for the island has functioned very smoothly and successfully, since it is so closely coordinated among all agencies involved.

Special cognizance should be taken of the joint staffing of some of the programs. The off-base Environmental Sanitation, the Communicable Disease Control, and the School Health programs have been accomplished in this manner. In all these programs, joint staffing has lent solidarity and additional comprehensiveness; whereas without these pooled resources, the programs would have been badly crippled and limited. This is all in keeping with the theme of maximum utilization of all specialty talents among Armed Forces personnel, and thus provide economy of effort.

In summary, we have many separate and autonomous groups of Americans and Ryukyans living and working closely together on Okinawa, all with interwoven or closely related health problems. These problems have been and are being solved by close interservice cooperation resulting from the organization of an all-inclusive health council. Since this Public Health Council has served as such a valuable mechanism for inter-agency and interservice cooperation and coordination on Okinawa, we believe that a description of the Council might be of value to others serving under similar circumstances in other areas of the world.

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Influences of Exercise and Diet on the Blood Lipids of a Military Population

By

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INTRODUCTION

EACH year the military services must absorb sizeable losses of highly trained personnel due to coronary artery disease and the other clinical manifestations of atherosclerosis. In the past fifteen years, a large body of research, both civilian and military, has evolved on the problems of (a) identification of individuals prone to coronary disease and (b) measures designed to decrease individual susceptibility to the disease state.

Many serum parameters have been suggested in the literature as being well correlated with the extent of atherosclerosis in man. Among these are the serum concentrations of lipoproteins,¹ cholesterol,² and phospholipids,³ the cholesterol-phospholipid ratio,⁴ the α - β lipoprotein ratio as determined by electrophoresis,⁵ the electrophoretic concentration of β -globulin,⁶ and combinations of such type measurements.⁷ In most cases, the tests were validated on the basis of their ability to discriminate between a clinically healthy group and a population with manifest atherosclerosis. More valuable would be a serum constituent that would segregate within a normal young healthy male population those in whom coronary disease would become clinically manifest in the future.

In the period 1950-1956, the National Advisory Heart Council sponsored a cooperative study to evaluate serum cholesterol and lipoprotein measurements as predictors of clinical complications of atherosclerosis, the results of which were inconclusive.⁸ At the present time a study of the West Point Class of 1956^{9,10} is underway in this laboratory to evaluate the predictive efficiency of the

concentrations of serum lipoproteins, cholesterol and lipid phosphorus. The "West Point study," designed to extend into the sixth decade of life with a sampling in each even year, should provide a definitive answer as to whether a serum lipid measurement made in the young adult can be used to predict extraordinary predisposition to coronary disease.

A predictive measure of susceptibility would be useful not only as a criterion for selection of personnel for particular occupational areas, but it would also indicate those individuals for whom a program of preventive medicine was necessary, and serve to evaluate the progress of any such program.

The concentrations of serum cholesterol, lipoproteins, and lipid phosphorus have been used extensively in attempts to evaluate the effects of drug systems, dietary changes, and physical activity on cardiovascular well-being. This paper presents data on such variables in a service population subjected to a rigorous physical regimen and a diet high in fat content over a period of eight weeks.

SUBJECTS, CONDITIONS, AND METHODS

The subjects were 199 healthy draftees who had reported for basic training at Fort Chaffee, Arkansas. One hundred and eighty-four were native Americans, while 15 were of Puerto Rican birth and upbringing. The average age was 20.6, with two people (ages 29 and 37) falling outside the range of 18 to 23. The average weight was 164 lbs., with a range of 110-305 lbs.

An initial blood sample was drawn one day after the basic training regimen began. The subjects were also sampled at the midpoint of training and at the conclusion of the eight-week period. At each sampling the weights were recorded. The diet for each day was obtained from the battery cook.

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The serum samples were analyzed ultracentrifugally for the concentrations of the S_1^0 0-12, S_1^0 12-20, S_1^0 20-400, and 1.2 lipoprotein classes by methods described elsewhere.^{11,12} The standard Gofman atherogenic index¹³ was calculated for each sample. Cholesterol concentrations were measured by a modification of the Bloor technic¹⁴ and lipid phosphorus concentrations by a modified Fiske-Subarrow method.¹⁵

In the first four-week period, the subjects averaged 20 hours of physical training per week. This was increased to an average of 24 hours per week in the second four-week period.

Fat calories in the diet, as calculated from daily menus, averaged 50 percent with a range of 43 percent to 58 percent, compared with the national average of 43 percent. Table 1 reproduces a sample menu and shows the method of calculation of percentage of fat calories.

RESULTS AND DISCUSSION

Table 2 shows the changes in variables in the group during the eight-week period.* The net changes include a significant increase in weight, cholesterol, lipid phosphorus, and S_1^0 20-400 lipoprotein concentrations, and a significant decrease in the levels of the S_1^0 0-12, S_1^0 12-20, and 1.2 serum lipoproteins. These changes were all significant at the .01 level. The decrease in atherogenic index was significant at the .05 level. These data point out the fallacy in drawing conclusions in this type of research on the basis of a single serum lipid parameter measurement. Thus, it may be seen that the significant increase in cholesterol concentration from samplings 1 to 2 (Table 2) was accompanied by a significant decrease in lipid phosphorus and in most of the lipoprotein classes. The measurement of choles-

terol concentration or any other single lipid variable gives only a partial, and probably erroneous, picture of the total blood lipid

TABLE 1
CALCULATION OF DIET COMPOSITION

Menu for 27 Feb. 1957	Quantity	Calories†	Grams fat†
<i>Breakfast</i>			
Fresh grapefruit	1	75	tr
Dry cereal	1 cup	95	tr
Fresh milk	1 cup	165	10
Fried eggs	2	150	12
Bacon	2 slices	95	9
Toast	1 slice	65	1
Butter	1 tbspn.	100	11
<i>Dinner</i>			
Swiss steak	4 oz.	400	35
Mashed potatoes	$\frac{1}{2}$ cup	120	6
Pickle relish	1 pickle	20	tr
Buttered succotash	$\frac{1}{2}$ cup	60	6
Lettuce with	$\frac{1}{2}$ head	10	tr
Russian dressing	1 tbspn.	120	10
Bread	1 slice	65	1
Butter	1 tbspn.	100	11
Fresh apples	1 medium	75	1
Tea or coffee	1 cup	0	0
<i>Supper</i>			
Vegetable soup with	8 oz.	75	2
Crackers	2	45	1
Irish stew	1 cup	250	20
Buttered noodles	1 cup	100	6
Cherry gelatin salad	$\frac{1}{2}$ cup	80	tr
on lettuce	$\frac{1}{2}$ head	10	tr
with mayonnaise	1 tbspn.	90	10
Hot rolls	1	65	1
Butter	1 tbspn.	120	10
Devil's food cake	1 slice	294	13
Tea or coffee	1 cup	0	0
		2844	176

Fat calories = $176 \times 9 = 1584$. % fat calories

$$\frac{1584 \times 100}{2844} = 55.7.$$

† Values taken from:

1. Wohl, M. G., and Goodhart, R. S.: *Modern Nutrition in Health and Disease*. Lea and Febiger, Philadelphia, 1955.
2. Hawley, E. E., Carden, G., and Munves, E. D.: *The Art and Science of Nutrition*. C. V. Mosby Co., St. Louis, 1955.

* Within the group of 15 Puerto Ricans, the changes in lipid variable followed changes in the group as a whole. There was little, if any, difference between the levels of any particular lipid variable in the Puerto Rican group and the group as a whole.

TABLE 2
CHANGES IN VARIABLES IN THE FORT CHAFFEE GROUP

Sampling No.	Weight	Height	Age	Cholesterol	Phospholipid	S _f ^o 0-12	S _f ^o 12-20	S _f ^o 20-400	A.I.	1.2
1	164	69.5	20.6	218	9.11	321	32	63	49	291
2	168		20.7	228	8.39	300	27	64	46	225
3	169		20.8	229	9.15	290	24	86	48	224

pattern, which may very well be shifting to compensate for the observed increase or decrease in a single variable.

The differences in reaction of the lipoproteins and serum lipids to the experimental regimen again demonstrate that the measurement of a serum lipoprotein concentration fails to establish either serum cholesterol or lipid phosphorus level. Data previously reported from this laboratory¹⁶ suggest that this difference may be attributed to the interaction of the lipid and the protein moieties in the lipoprotein complex.

Tables 3 and 4 summarize the data for

TABLE 3

F^o CHANGES IN LIPIDS WITH CHANGE IN WEIGHT

Sampling No.	Variable					
	S _f ^o 0-12	S _f ^o 12-20	S _f ^o 20-400	A.I.	Cholesterol	Lipid Phosphorus
	<i>Lost 6 lbs. or over (5)</i>					
1	376	49	85	61	234	9.30
2	349	40	109	61	231	8.48
	<i>Lost 1-5 lbs. (26)</i>					
1	347	36	64	52	226	9.27
2	299	23	47	42	226	8.23
	<i>Even (13)</i>					
1	362	35	75	56	233	9.45
2	338	29	66	50	241	8.36
	<i>Gained 1-5 lbs. (65)</i>					
1	308	31	74	51	212	9.00
2	296	27	57	44	221	8.15
	<i>Gained 6-10 lbs. (61)</i>					
1	325	31	63	47	216	9.09
2	304	27	68	46	227	8.41
	<i>Gained 11 lbs. or over (29)</i>					
1	329	32	58	48	218	9.14
2	311	31	76	50	245	9.02

The numbers in parentheses refer to the number of persons in the groups.

changes in lipid concentrations as a function of weight change for the first and second four-week periods. In general, there is some correlation between the weight changes and the changes in each lipid and lipoprotein parameter, but the relationship is not clear-cut as might be expected from previously published data.¹⁷ As a further test of the influence of the weight change factor, each subject was classified into one of four categories according to his change in weight during the first and second four-week periods. The categories were (a) consistent gainers, (b) consistent losers, (c) evens, and (d) inconsistent. Since only two subjects were classified as evens, this grouping was

TABLE 4

CHANGES IN LIPIDS WITH CHANGE IN WEIGHT

Sampling No.	Variable					
	S _f ^o 0-12	S _f ^o 12-20	S _f ^o 20-400	A.I.	Cholesterol	Lipid Phosphorus
	<i>Lost 6 lbs. or over (13)</i>					
2	323	31	66	49	231	8.4
3	294	24	79	48	228	9.2
	<i>Lost 1-5 lbs. (53)</i>					
2	291	28	70	46	221	8.3
3	272	24	81	45	221	8.8
	<i>Even (22)</i>					
2	287	28	70	46	221	8.3
3	284	22	92	48	225	9.1
	<i>Gained 1-5 lbs. (100)</i>					
2	308	27	60	46	236	8.5
3	300	25	87	49	235	9.3
	<i>Gained 6 lbs. or over (10)</i>					
2	279	17	55	41	216	7.9
3	311	18	78	48	229	9.5

The numbers in parentheses refer to the number of persons in the groups.

dropped. An analysis of variance was performed for each variable in each group. The variation attributable to groups for each of the variables except weight was not found to be significant. The analysis of group X period interaction also was not found to be significant for any variable except weight. Both of these tests indicate the similarity in mean response of the various weight change groups for each variable studied.

During this basic training period, a high fat content diet and an extensive physical exercise regimen were initiated. The results obtained would indicate an interplay of the two factors. On the basis of diet and weight changes alone, the expected result would be an increase in the concentrations of all the lipid variables. That these increases are mediated somewhat (even appearing as negative changes in some instances) could be attributed to the physical exercise regimen. This interaction has been noted in previous studies of the effect of physical activity on lipid levels.¹⁷

In order to determine the relationship existing between the subjects' initial levels and their changes in levels for each variable, the subjects were classified into four groups on the basis of their initial values. The standard deviations σ , computed on the initial levels, were used to designate the intervals (a) lowest initial value to (mean - σ_1), (b) (mean - σ_1) to mean, (c) mean to (mean + σ_1), (d) (mean + σ_1) to highest initial value. Contingency tables were set up to indicate for each interval the number of subjects whose variable levels increased and the number whose levels decreased. X^2

TABLE 5
CORRELATION OF ATHEROGENIC INDEX CHANGE
WITH INITIAL LEVEL

Initial Level Intervals	n	No. of Increases	Percent Increases	No. of Decreases	Percent Decreases
11-34	31	22	73.3	8	26.7
35-48	72	37	55.2	30	44.8
49-63	63	15	24.6	46	75.4
64-86	32	3	9.4	29	90.6

$$\chi^2 = 38.568$$

$$P < .01$$

tests were performed to test the hypothesis that there was no relation between a subject's initial level and his change in level. Table 5 shows the typical calculation for atherogenic index.

The X^2 values obtained for all of the variables were significant at the .01 level. These results indicate that initial levels and changes in level were highly correlated. Such is demonstrated by the percentage figures in the contingency table. A large number of people in the low-initial-level group experienced an increase in their variable levels, whereas the opposite was true in the high-initial-level group. The net result is a shuffling of the rank order of the group and elimination of values at the low and high end of the spectrum, presumably a beneficial effect of the diet-exercise interaction.

In a recent publication from this laboratory,¹⁰ serum lipid variable data were presented for a group of West Point cadets. The values of the lipid variables for the West Point cadets were very low in comparison with a civilian population sampled by the

TABLE 6
COMPARISONS OF LEVELS IN VARIOUS GROUPS

Variable	No. of Subjects	Height	Weight	Age	Cholesterol	Phospholipid	S _r ^o 0-12	S _r ^o 12-20	S _r ^o 20-400	A.I.
Ft. Chaffee Initial	199	69.5	164	20.6	218	9.11	321	32	63	49
Final	199	69.5	169	20.8	229	9.15	290	24	86	48
West Point	475	70.7	166	21.6	219	8.7	196	21	23	28
Civilian				20.5			282	42	111	55

Donner laboratory. Table 6 is a comparison of basic trainee levels with West Point and civilian data. The levels for the basic trainee group approximate those of the civilian group, and are much higher than the corresponding West Point levels. These differences could be attributed to the selection methods, wherein the basic trainees represent an initial screening of the civilian population, and the West Point cadets a rigorous examination of the same population.

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Acute Multiple Myeloma—Report of Case*

By

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MULTIPLE myeloma has changed from an extremely rare condition to one which must be considered regularly in the daily practice of medicine. This mounting incidence may be due to an actual increase in the disease, perhaps related to the advancing life expectancy of the general population, or it may be the result of astute clinical observations and improved laboratory recognition. It is likely that both factors are related to the increased frequency of the disease. Since medical awareness is the variable that can be altered by the physician himself, it becomes important to communicate clinical data which stress unusual presenting symptoms, unexpectedly rapid termination, and extreme laboratory results.

REPORT OF CASE

This 65 year old, well developed, well nourished, white male was first admitted to the hospital with a complaint of bleeding from the left side of his nose. Since this was his only complaint, he was first admitted to the Otolaryngological Service. It was ascertained that the patient had had episodic epistaxis as a child but had had no further trouble until the summer preceding this admission when he had one spontaneous nasal hemorrhage which was self-limited and had not recurred until the present episode. The only other symptom that could be elicited was that of mild dyspnea on exertion present, for one year; there was no orthopnea, nocturnal or paroxysmal dyspnea, or edema.

Except for typhoid fever in 1913 and an appendectomy in 1918, there was no past history of illness. The patient denied the use of alcohol or drugs but admitted to smoking one cigar daily for many years. The family

history revealed that three of the seven siblings had perished traumatically. Of the other three survivors one brother had bronchogenic carcinoma, one had had a pneumonectomy allegedly from severe asthma, and the third had had similar episodes of epistaxis. The patient's parents had each survived to eighty-six years of age, when one died from complications following a fractured hip and the other of cerebral thrombosis.

The physical examination was unusually non-contributory. The patient was 66 inches tall and weighed 149 pounds. He was afebrile and the blood pressure was 164/100 mm. Hg in the sitting position. The patient was mentally alert and somewhat pale. There was a small scab on the right cheek and another on the upper lip. Posterior rhinoscopy showed clotted blood and an oozing of blood from the floor of the left nostril. The chest, lungs, heart, abdomen and genitalia were normal except for a well healed right lower quadrant abdominal scar. It was especially noted that the liver and spleen were not palpable. The region of the distal phalanx of the right middle finger was swollen and of a mottled bluish color with an area of pallor along the medial border of the nail bed.

The admission chest X-ray was described as showing slight left ventricular cardiac enlargement, elevation of the right leaf of the diaphragm and increased hilar and lung markings bilaterally. The electrocardiogram was interpreted as revealing bursts of nodal rhythm and left ventricular hypertrophy.

At the time of admission the WBC was 7,000 with 51% neutrophils, 39% lymphocytes, 8% monocytes, 1% eosinophils, and 1% basophils. The RBC was 2.21 million, hemoglobin 42%; hematocrit 23% and the platelet count was 243,100. The sedimenta-

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tion rate was 18 mm. Clot retraction was completed in three hours; and the prothrombin time was 15.9 seconds, which was 52% of the daily control values. The BUN was 12.2 mgs.% and the blood glucose was 93 mgs.%. Serum bilirubin was 0.4 mg.%; thymol turbidity was 0.5 units. The direct van den Bergh was reported as negative and the indirect was reported as positive. The initial urine specimen was clear yellow with a neutral reaction, negative for sugar and acetone, and contained 4 plus albumin. The urinary sediment contained 0 to 2 fine granular casts, 10-15 RBC's and 3-5 WBC's. A repeat urinalysis on a morning specimen was clear amber with a specific gravity of 1.012 and was negative for albumin, sugar and acetone. The urinary sediment contained only amorphous debris. The total protein was repeated on separate fasting blood specimens taken the A.M. following admission and was found to be 14.6 gms.%, with the albumin portion being 1.6 gms.% and the globulin fraction being 13.0 gms.%.

The patient was given a transfusion of one unit of whole blood and transferred at once to the Medical Service. A bone survey by the Radiology Service revealed small osteolytic lesions scattered throughout bones of spine, pelvis, and femora. There was calcification of spinal ligaments and blood vessels of pelvis and spine. Daily urinalyses resembled the admission urine and were consistently negative for Bence Jones protein until eight days following admission. L.E. cells were searched for repeatedly but never found. Ten days after admission the total proteins were 17.8 gms.%, of which 2.05 gms.% was albumin and 15.75 gms.% was globulin. The electrophoretic pattern revealed that the major portion of the greatly elevated serum proteins was gamma globulin.

Except for repeated small epistaxes the patient was asymptomatic during his hospitalization. His treatment included five indirect transfusions utilizing 500 cc. each of whole blood and symptomatic therapy including digitalization for his left cardiac hypertrophy, aminophylline for dyspnea and

TABLE 1. ELECTROPHORETIC FINDINGS OF ALBUMIN AND GLOBULIN OF PATIENT

	Patient values in gms.%	Normal values in gms.%
Albumin	4.22	3.5-5.0
Alpha 1 globulin	0.23	0.2-0.4
Alpha 2 globulin	0.53	0.4-0.7
B globulin	0.44	0.6-1.0
Gamma globulin	11.58	0.8-1.45
Total	17.00	7.0-1.5

serpasil for the mild hypertension which ranged from a high of 200/100 mm. Hg on admission to an average of 150/80 at the time of his first discharge exactly one month following initial admission, at which time the patient was ambulatory and asymptomatic.

Just five days later, the patient reappeared at the hospital with recurrent epistaxis and petechiae over his entire body. These latter had first appeared on the forearms but rapidly became generalized. Examination at this time revealed the cutaneous purplish-red lesions scattered over the trunk and extremities and small crusted lesions in both nares, on the right cheek, and on the right side of the upper lip. The examination was otherwise normal except that the temperature was 100.2°F, the pulse 108/min. and regular, and the blood pressure 158/62 mm. Hg.

The chest x-ray and electrocardiographic findings were unchanged, as was the serology. Urinalyses were consistently positive for Bence Jones protein with a 4 plus albumin and a specific gravity fixed at 1.008. Urinary sediment regularly contained casts and red and white blood cells. The total proteins were now 20.2 gms.%, of which 1.4 gm.% was albumin and 18.8 was globulin. The BUN was 25 mgs.% on readmission and gradually but rapidly increased to 152 mgs.% just prior to the patient's death. The hematocrit was 21.5%, hemoglobin 44%, RBC 2.14 million, and these values remained essentially unchanged except by the four indirect transfusions administered during this admission. The WBC was 5,200 per cu. mm., with 61% neutrophils, 21% lymphocytes,

5% monocytes, 10% eosinophils and 3% bands the day of readmission. Four days later the WBC was 4,000 with essentially the same differential count, but one week following this admission the WBC was 2,900 per cu. mm., with 17% neutrophils, 54% lymphocytes, 16% monocytes, 7% eosinophils, 6% basophils, and plasma cells. The WBC gradually rose to 11,000 per cu. mm., with 49% neutrophils, 35% lymphocytes, 12% monocytes, 2% eosinophils, and 2% basophils terminally.

This terminal readmission was for epistaxis and petechiae. These faded when all treatment except vitamins, blood transfusions, and bed rest were discontinued. Constant frontal headaches, oozing from the lip and cheek lesions, and brief epistatic episodes then became troublesome. Nine days following the second admission the patient spiked fever to 105°F. This was accompanied by back pain and dimming of consciousness, followed by the appearance of bloody urine, and then of hypouria of 50 cc./24 hours. Hiccoughs developed, then increasing stupor, and terminally uremic coma was complete with death 53 days following the initial admission.

The autopsy confirmed the diagnosis of multiple myeloma for there was demonstrated plasma cell infiltration of spleen, bone marrow, lymph nodes, vertebrae, and kidneys. Many plasma cells were also seen in vascular channels. The other findings were cortical adenoma and lipid depletion of the adrenals, chronic pyelonephritis, bronchopneumonia with purulent bronchitis, coronary arterio-sclerosis with focal myocardial fibrosis, acute ulcerative esophagitis, and cloudy swelling of the liver.

DISCUSSION

Kenney and Moloney¹ have recently reviewed multiple myeloma by a survey of 57 of their own cases. We are in complete agreement with this excellent report but we believe that our case serves to stress certain possibilities of multiple myeloma that are overlooked not only in their review but in

frequently utilized source texts² but which might well be brought to the attention of the medical profession.

Multiple myeloma may occur at any age but it is largely a disease of persons past 50 years of age. Although the average survival time has been given as less than two years, there is a tendency to regard the condition as chronic. However, from the date of first symptoms to death was less than two months in our case, which certainly is a situation comparable with the acute leukemias and emphasizes the possible acuteness of multiple myeloma.

Pain and weight loss were not present as the cardinal symptoms. The albuminuria was at best equivocal on admission and the anemia had just cause in the prolonged epistaxis present when our patient was first admitted. It would have been easy to have treated the epistaxis and considered it to have been due to nasal crusting, local trauma, arteriosclerosis, or mild hypertension. However, the true cause began to appear when a battery of studies of liver function, hematology, and blood chemistry were done in a detailed search for the cause of the epistaxis. It is important that unexplained persistent symptoms give rise to more than the usual search for systemic disease, particularly in persons of the late middle-aged group. Epistaxis, petechial hemorrhage, and microscopic or gross hematuria should probably be regularly included in that list of signs and symptoms which cause the examiner to consider and search for multiple myeloma.

When radiologic bone surveys for osteolytic lesions, urinalyses for albumin and Bence Jones protein, hematologic examinations for plasma cells, and blood chemistry studies for bizarre plasma protein levels are then done, confirmation of the examiner's suspicions may reveal multiple myeloma to be even more common than presently suspected.

An exhaustive search of the literature has not been made to determine record total protein and globulin levels. However, we

believe that a total protein of 20.2 gms.%, of which 18.8 gms.% is globulin, mostly of the gamma type, is unusual in itself. The rise of these values from total protein of 14.6 gms.%, with 13.0 gms.% being globulin, to the higher values in 28 days is likewise unexpected. The rapid change in the blood proteins is only one of the factors that re-stress the acuteness of this condition.

Unfortunately, after emphasizing the need for a higher "index of suspicion" for multiple myeloma, it must be admitted that there is at present no effective therapy for the condition. Management can only be symptomatic but careful and judicious pursuit of symptomatic relief can add to the patient's comfort and well-being and is therefore not to be taken lightly.

SUMMARY AND CONCLUSIONS

A case of acute multiple myeloma is reported. The duration of the disease from

first symptoms to death was fifty-three days. The presenting, and for a long period, only complaint was of periodic mild epistaxis. The findings of osteolytic bone lesions by x-ray and of Bence Jones protein by the laboratory confirmed the diagnosis first suspected when deranged blood proteins were found during the routine clinical study. The blood proteins became grossly deranged during the course of the disease, giving unusually high levels. The total protein reached 20.2 gms.% and the globulin was 18.8 gms.%. Approximately 90% of this globulin was composed of the gamma globulin fraction.

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"No mere outlay or money or physical resources will buy a day, an hour, a moment of freedom," Army Secretary Wilber M. Brucker has said. "Its price is vigilance, sacrifice and service on the part of each one of us, and strict adherence in the conduct of our individual lives and our national affairs to the fundamental ideals and principles which are the roots of our American heritage."

A Method for Surgical Lengthening of the Femur of the Dog*

By WILLIAM I. GAY, DVM†

(With seven illustrations)

THE purpose of this experiment was to evaluate the usefulness of a prosthetic device for restoring the length of weight bearing long bones which had been shortened as the result of injury. A similar device had been used successfully for replacing the mid shaft of the normal radius of the dog.¹

Prosthetic devices of larger dimensions but similar design to the one used in the radius, were constructed of stainless steel alloy #316 (fig. 1). The prosthesis enabled dogs to be ambulant during the recovery period and did not require external splinting. The outside diameter was about the same as the outside diameter of the bone so that it could not pass into the medullary canal, thereby allowing the bone to shorten. There was a four sided point on each end of the prosthesis which prevented rotation, provided it was firmly in place. The points were in contact with the bone ends beneath the bone cortex so that it did not cover the periosteum or endosteum from which new bone could grow.² The bone segments and the prosthesis were stabilized with an intramedullary pin.

METHODS

All dogs in this series except one, had some loss of femoral cortex in the mid shaft region. Three animals had been operated on previously, using a device too weak in design. They had lost about one and one half inches of mid shaft cortex but some new bone had formed before their prosthetic devices were broken. Dogs #6285 and #6104 were re-

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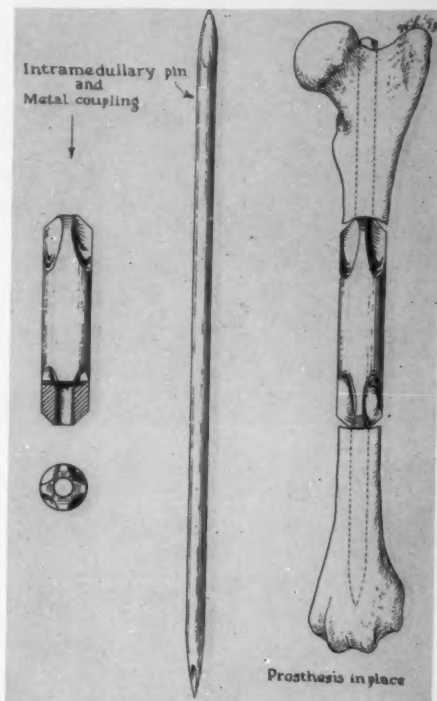


FIG. 1. The prosthetic device for replacing the mid shaft of the femur of the dog.

operated and the above device was installed three months following installation of the unsuccessful device; dog #6967 was operated about 10 months postoperatively.

In 6 dogs a defect was created by surgically removing one inch of femoral cortex. The cut ends were brought together and the bone was stabilized with an intramedullary pin. Because the smoothness of the cut with the wire saw allowed some rotation around the intramedullary pin, these dogs tended to develop non-unions. Prosthetic repair of all of the above animals was undertaken regardless



FIG. 2. Dog #6701—Immediately after operation.



FIG. 3. Dog #6701. Five and one-half months post-operatively the leg is entirely healed and the involucrum is complete.

of the prognosis. Dog #6104 who had an injured femorotibial joint and dog #6739 who had infection in the fracture site were considered poor risks at the time of operation.

The operative area was exposed through an incision on the lateral side of the leg from the trochanter to the proximal edge of the femorotibial joint. The skin and subcutaneous tissue were reflected and the fascia of the tensor fasciae latae was incised from the trochanter to the lateral condyle of the femur. Exposure of the femur was accomplished by blunt dissection between the vastus lateralis and the biceps femoris. The old fracture site or area of non-union was removed. Bone callus was removed from the ends of both bone segments until normal solid cortex was exposed. This cortex was ground smooth and made concave with a cranial burr so that the points of the prosthesis would be evenly in contact with the bone and so that there would be no defects which would predispose to longitudinal fractures. The total bone length and the site of the bone lesion were measured before and during the removal to make sure that the prosthesis would be at least $\frac{1}{2}$ inch longer than the space it was to bridge. Compression of the bone against the prosthesis by this $\frac{1}{2}$ inch stretching of the bone against its muscles was necessary to provide proper seating of the points of the prosthesis and may have hastened healing.³ Whenever possible the periosteum was reflected and preserved. The involucrum formed more rapidly if the periosteum was kept intact.²

As soon as bone ends were prepared, the intramedullary pin was driven into the medullary canal of the proximal end of bone. The prosthesis was put in position with one point against the proximal segment. Both were aligned with the distal segment and the intramedullary pin was seated as in figure 1.

RESULTS

Dog #6701 had a stainless steel prosthesis placed in its femur to confirm the acceptance of the stainless steel used to construct this device. The device was slightly small for the

bone size which allowed some shortening but was otherwise completely satisfactory. It was quickly covered with bone callus (figs. 2 and 3). Dogs #6685, #6739, #8503, #7274 and #6737 all had experimental fractures with loss of bone. The fracture site of dog #6739 was badly infected before repair, severe osteomyelitis developed postoperatively and the animal did not use its leg. Dog #6737 had a similar fracture but it was not infected. Although the prosthesis has not yet been covered with an involucrum, this dog uses its leg for complete weight bearing (figs. 4, 5 and 6). Dog #6685 used its leg for weight bearing very early and developed motion between the prosthesis and the proximal bone segment. As of the writing of this paper, it uses its leg for partial weight bearing and the prosthesis has been almost completely covered with bone callus. Dogs #8503 and #8616 use their legs for weight bearing but bone healing is not completed and the device is not covered with an involucrum. Dog #7274 fractured the foreleg on the same side as the operated femur two months postoperatively. Due to his increased attempts at weight bearing on the operated femur following this accident, motion developed between the bone and the prosthesis.



FIG. 4. Dog #6737—The site of a one-month-old fracture and non-union of the femur.



FIG. 5. Dog #6737—Fracture site replaced with prosthesis.



FIG. 6. Dog #6737—Six months later. The leg is healing and weight bearing is complete.

TABLE 1
RESULTS OF FEMORAL SHAFT OPERATIONS WITH PROSTHESIS

Dog	Type of Injury	Time Between Injury & Repair	Weight Bearing Days—Postoperatively			
			60	120	180	300
6701	none	immediately	complete	complete	complete	complete
6585	one inch of mid shaft cortex	4 weeks	complete	partial (motion developed)	partial	partial
6739	one inch of mid shaft cortex	4 weeks	none (drainage)	none (infected drainage)	none SACRIFICED (leg atrophied)	
6737	one inch of mid shaft cortex	6 weeks	partial	partial	partial	complete
6104	Previously unsuccessful prosthesis	12 weeks	very little	partial	partial (developed motion)	none
6285	Previously unsuccessful prosthesis	12 weeks	partial	partial (slight wound drainage)	partial	complete
6967	Previously unsuccessful prosthesis	40 weeks	complete	complete	complete	
7274*	one inch of mid shaft cortex	4 weeks	very little	none (developed motion)	none	
8503	one inch of mid shaft cortex	4 weeks	partial	complete	complete	
8616	one inch of mid shaft cortex	6 weeks	complete	complete	complete	

Results, as measured in weight bearing, of operations on dogs having experimental fractures of the femur with about one inch of shortening.

* Fracture of the radius and ulna postoperatively caused premature weight bearing on the operated femur.

Dogs #6285, #6967 and #6104 received new stainless steel prosthetic devices following failure of their original devices. The failure of these devices was due to a weak intramedullary pin which bent and eventually was broken (fig. 7). They were repaired in the same manner as the above animals. The results of their operations were gratifying (table 1) in view of the amount of previous

injury and muscle atrophy. Dog #6104, whose knee joint had been injured with the intramedullary pin, was considered a poor prognosis and was unable to bear weight on his leg following the second operation.

DISCUSSION AND CONCLUSIONS

It was practical to use this prosthesis to restore the length of a dog's femur which



FIG. 7. Dog #6967—The intramedullary pin bent and was broken later. The leg was used for weight bearing at the time of this radiograph even though the involucrum was incomplete.

had been shortened by injury if the defect was bridged by a tight fitting device and the operative site was not infected.

In any bone with an area to be replaced by this prosthesis there must be sufficient distal and proximal segments of bone remaining so that they can both be stabilized with an intramedullary pin.

The success of this procedure was dependent on having a prosthetic device of sufficient length so that the points would fit firmly against the bone cortex of both distal and proximal segments. The total length of the

bone was extended about $\frac{1}{2}$ inch so that muscle tension would insure a tight fit.

When the prosthesis was properly installed, postoperative splinting was not necessary because the points of the prosthesis became seated in the bone and prevented rotation. It was important to keep animals caged and inactive during the first four weeks postoperative, to reduce the chance of weight bearing attempts on the operated limb which would have interfered with the points of the prosthesis seating firmly in the bone.

SUMMARY

An operation using a metal coupling for replacing segments of weight bearing long bones is described. Early weight bearing or use of the prosthesis in an infected operative site resulted in unsatisfactory healing. Favorable results were obtained in restoring the length of the majority of bones shortened by injury.

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Evolution of the Concept of Disease in Modern Pathology

By

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VIRCHOW's celebrated classical work on Cellular Pathology was published in 1858, a hundred years ago.¹ Pathologists and historians everywhere commemorate this epoch-making event, though it was only one step in the history of the science of disease and one more unsuccessful attempt at grasping the true nature of Disease and its fundamental element that seems to be always hidden just beyond the borderline of comprehensible reality. Dr. Welch, the famous star of American medicine, once said that "the ultimate problems of reality and of knowledge belong to metaphysics."² Indeed, every branch of science has its roots in metaphysics. Pathology is no exception, and the interest of the specialists of this science in the metaphysical and meta-microscopical questions of Life, Disease, and Death has been the most powerful motive for the advancement of this specialty, as a brief tour in the past two hundred years' medical history may show.

Modern pathological research began with Morgagni in the 18th century. In 1761, he published a classical work, in the form of 70 letters, "*De sedibus et causis morborum libri quinque*" (Five Books on the Sites and Causes of Diseases).³ Since then, pathology marched along almost 200 years. This long period can be divided into four fifty-year sections, each representing a special phase in the development of the science of disease. During the first three phases, from 1761 until about 1900, the chief mark of pathology was the *anatomical idea*. The interest of the pathologists was focused, at that time, upon the question of which part of the body was the site of the disease. As our knowledge of our body's parts was advancing, the pathologist continued to shift the site of disease into smaller and smaller units of the human structure. For Morgagni, in 1761, the

smallest structural unit was an organ; hence, his was an *organ pathology*.

The second fifty-year period of the history of pathology begins in 1800 when Bichat published his anatomical work on the tissues and membranes of the human body (*Traité des membranes en général*. Par., 1800).⁴ Of course, for him the smallest structural unit was the membrane and tissue; hence, his was a *tissue pathology*. The third section of our history begins with Virchow's *Cellular Pathology in 1858*. For him the smallest unit of life was the cell; hence, his was a *cellular pathology*. He also considered that the essence of disease, the *ens morbi*, was the sick cell. Finally, at the beginning of the 20th century, the anatomical and analytical approach to pathology resulted in a discontent both among the sick people and among clinicians and practitioners.

The views on the true nature of disease moved along with the shift of the site of the disease. This movement is the combination and alternating play of two never-ending sinusoid waves of the two fundamental ideologies about the universe, interwoven with their opposite peaks and valleys:—the *mechanistic* ideology and the *vitalistic* ideology. The former considers all normal and abnormal changes in the human body the results of physically measurable quantities while the latter assumes the existence of a durable and unmeasurable (i.e., meta-physical) energy of life, a vital force which the pathologist may please to call by any name, according to his theological point of view.

The fourth phase of modern pathology, and the most interesting and most important for modern medicine, began in 1900. This is the birth year of the quantum theory of Max Planck⁵, and the year of foundation of nuclear physics as well as the date of the death sentence to classical mechanics, to the rigid

laws of determinism and to the cocksure certainty of the so-called exact sciences. Much has been written on the philosophical consequences of the anarchy in modern physics.⁶ The revolution in physics brought up the idea of wholeness in physical integrated systems, and also helped the biological sciences in shaking off the fetters of mechanistic thinking. In general biology, the re-integration of cells, tissues, and organs into one individual, living organism was the merit of such people as Hans Driesch,⁷ John Scott Haldane,⁸ and others. The South-African statesman General J. S. Smuts,⁹ named the new approach to life's problems *holism* (from the Greek "*holon*": the whole, the totality).

Holism is the doctrine that the dynamics of the living whole permits of no differentiation of discrete elements. Its fundamental principle is that an integrated or coordinated whole is more than just the sum of its constituents. The holistic viewpoint assumes that Man is a single, indivisible biological unit, and not a socialistic state of autonomous cells as had been taught by Virchow in his Cellular Pathology; that, as a living organism, Man has to be considered together with his environment. The holistic philosophy is contrary to both the mechanistic and the vitalistic ideology of previous centuries. Its literature is extensive.¹⁰

In the field of pathology, the holistic principle means a complete about-face in the direction of research, a turn from the dead human parts and formalin-kept specimens to the living human body as the object of scrutiny. Many are the varieties of holistic approach in modern pathology. Most of them grew up in European countries, in Germany and among her neighbors. Some were of transient interest only while some became internationally known and of lasting value. They may differ in details but all agree in the open revolt against the anatomical idea, against the localization of disease in structural parts of the body. The main representatives of the holistic trend in pathology are outlined in the following grouping:

HOLISTIC PATHOLOGY (1900—)

1. Constellation (1920: Tendeloo)
2. Constitution (1914: Martius; 1919: Kraus)
 3. Humoralism (1910: Richet)
 - a) Chymology (1929: Gallois)
 - b) Sero-morphology (1927: Lösche)
 - c) Colloidal (1922: Lumière)
 4. Intercellular substance (1943: Chiari)
 5. School of Aschoff (1936: (Aschoff)
 - a) Hetology; emptomatology (1949: Gräff)
 6. Clinical physiopathology (1950: Hoff)
 7. Function (1912: Bergmann)
 - a) Psycho-somatic medicine
 8. Relation (1905: Ricker: neuro-humoro-cellular trias)
 - a) neuro-cellular dualism (1935: Speransky)
 9. Dynamic reaction (1946: Neergaard; Chronoholism)
 10. Quantum biology (Pascual Jordan)
 - a) Biological medicine (1936: Kötschau).

As the outline shows, the starting points of these holistic pathologies are also different, and according to their "lines of attack" the degree of their success in the integration of the organism has been varying. One of them will stress the concurrence of the many environmental factors in human disease as does Tendeloo, about 1920,¹¹ in his *pathology of constellations*; another may emphasize the role of both heredity and environment as does the *pathology of constitution* of Martius in 1914.¹² It is true that the idea of constitution is of ancient origin, yet its modern importance is the merit of the constitution pathology which was further developed by Bauer, Aschner, Theodor Brugsch, Kretschmer, Pende, Viola, and many others. On the ground of constitution, Friedrich Kraus was able to work out a biology and *pathology of the person* which he called "clinical syzygiology".¹³

Another ancient doctrine returned in a rejuvenated form. It is the doctrine of humorism and *humoral pathology* which was also favored in its renaissance by the gradual discredit of the anatomical thought and by

the advancements in physiological chemistry. It was recognized that all living cells are aquatic, and the human cells in the body are no exception. Every part of us that is alive is in contact with fluid (Cannon).¹⁴ Modern humoralism comes from France where Charles Richet¹⁵ was the one who particularly promoted its growth. To be distinguished from the humorism of the ancients, the new doctrine of humoralism was labelled "chymology" by some of its supporters (P. Gallois).¹⁶ From the viewpoint of a modern humoralist, both health and disease are properties of the whole body, one being the balance and the other the imbalance between forces of the organism and of the external world. Lumière, the patho-biologist of Lyon, suggested in 1922¹⁷ another version of this doctrine according to which Disease is an irritation of nerve endings by precipitated or flocculated colloids; the colloidal equilibrium might be broken by a long series of external and internal influences.

Another group of dissatisfied pathologists attempted to save the anatomical localization principal by: (1) either assigning more importance to certain general structural elements of the body, or (2) attempting to work with hypotheses which could bridge over the gap between various theories of disease. Hueck's doctrine on the *mesenchyme* (1920),¹⁸ Chiari's efforts towards a *pathology of intercellular substance* (1943),¹⁹ and Aschoff's description of the *reticulo-endothelial system*, in spite of their primarily morphological tendency, indicate a gradual abandonment of the small cell even in the circle of the more conservative histo-pathologists. The other road was followed by Löschke in 1927 when he offered a serological hypothesis for the explanation of a degenerative systemic disease.²⁰

The holistic views of the *Aschoff School* have been aired by the master himself in 1936.²¹ According to his ideology, Disease has two components: (1) "reaction" to the pathogenic agent of the environment; this he calls "*nosos*", and (2) a residual constitutional change of the body as a whole, a

"tendency to react"; this he calls an affection, or "*pathos*". He holds that life phenomena cannot be explained fully by the physical laws of cause and effect because, by its being a wholeness, the organism has certain forces which cannot be measured by ordinary means. A causal analytical consideration is good and possible only for the strictly material, bodily relations of human life, within the realm of a few theoretical branches of medicine. But, for practical medical work the consideration of *all* parts of the human being is essential, including the subject of psychology. One of Aschoff's pupils went as far in holism as to create new terms for the holistic pathology. Sigfrid Gräff, at Hamburg, created the term "*hetology*" to show the originality of his own ideology. He states that the anatomical thought as represented by Morgagni and Virchow was detrimental to the clinic because it identified disease with the diseased part of the body. In his view, disease is of the whole man; its structural and functional signs are only "emptoms". The clinical study of these "emptoms" is the task of pathological research which he calls *emptomatology* (1949).²²

Among the more conservative trends in pathology is one called *clinical physiopathology*. It is represented by Ferdinand Hoff, director of the Medical Clinic of the Aachen Hospital. He stated in 1950 that "disease is not an anatomical local process or a physiologically isolated disturbance of function but a condition of the living whole of the organism. . . . As each life is a representation of a psycho-somatic whole, Disease is also a psycho-somatic phenomenon".²³

Another more restrained trend is the *functional pathology* of Bergmann which has been growing since 1912.²⁴ It teaches that functional disorders may originate in an upset of the balance of the autonomic nervous system and may finally end in organic lesions, e.g., in ulcers of the stomach. Functional pathology prepared the way for our modern *psychosomatic medicine*; it also resulted in a somewhat cautious reform of surgery upon a functional basis as it appears in the activity

of Christian van Gelderen, the Amsterdam surgeon.²⁵ For this type of surgery the anatomical substratum is of lesser importance since pathological structures may result from mental tension (1943). The latest attempts of our military medical establishments at healing perforated gastric ulcers may be also considered a victory for the holistic approach in pathology.

The most remarkable are those holistic pathologies which are built upon the nervous system as the chief integrating principle for the coordinated maintenance of the living organism. Already in the 19th century we may find traces of a possible *pan-neural pathology*. Cuvier himself emphasized that "it is the nervous system which makes a whole out of an animal; the organs are there only for the purpose to serve that system". A much closer association of the nervous system with all cells of the organism was believed by Marchand, pathologist in Giessen (1882).²⁶ But, aside from these early traces, Gustav Ricker was the first and the earliest (1905) with his pathology of relations ("*Relationspathologie*") whose experimental foundation goes back to 1899.²⁷ Though his work is almost unknown to American pathologists it seems to me that his ideas will grow and become as important in the future development of theoretical medicine as was Virchow's cellular theory for the second half of the 19th century.

Ricker's pathology is built around the circular relation of three elements of equal rank in the body:—the neural (vasomotors), the humoral (blood-vessels, blood and tissue fluids), and the cellular (tissues). The neural element establishes integration of the entire organism by the infinite thread of terminal network which, according to modern histology (Stöhr, Boeke, Sunder-Plassman), ties up cell after cell. Irritation of the vasomotors causes changes in the width of blood-vessels, thereby in the quantity of blood supply and the quality of tissue fluid. Such changes will then modify the relation between the fluid element and the solid cell element, with resulting changes in metabolism, structure,

and function. The cellular changes may again act upon the neural elements (*neuricon*). Strong stimulation of the neural element will result in disease; mitigation of the stimulus will bring on healing.

Ricker's doctrine found many followers in Germany, and his general theory was also transferred into special fields of pathology.²⁸ We find among his followers such outstanding medical personalities as Veil, Schäfer, Döring, Kalbfleisch, Dietrich, Sturm, Nonnenbruch, Siegmund, etc. One of the followers is especially noteworthy. He is Aleksandr Dmitrievich Speransky, director of the Physiopathological Department of the Leningrad Institute of Experimental Medicine. He is better known in the English-speaking countries than his master, Gustav Ricker. His work was published in 1935 in Russian, and was later translated into English (1943).²⁹ Speransky's *relation pathology* is built upon two elements only:—the neural, and the cellular. He considers that all diseases, including the acute exanthematic fevers such as scarlatina, are brought about by a primary direct irritation of the central nervous system, and the diencephalon. He was able to design new, unusual methods for the irritation of the brain cortex and central nervous system in order to prove the soundness of his theory. These new ways are:—(a) spotlike freezing of the brain cortex, (b) massage of the spinal cord and brain by repeated pumping of the cerebrospinal fluid, and (c) insertion of glass beads in the brain tissue. By such experimental methods he was able to produce various diseases at the periphery of the body, such as diseases of the gums, and typical paradentosis.³⁰

The importance of *the diencephalon* in pathogenesis has been also proved by another follower of Ricker, Wolfgang Veil.³¹ He and Sturm found in 1946 that the diencephalon is responsible in exophthalmic goiter, certain types of obesity, diabetes mellitus and insipidus, arterial hypertension, etc. Speransky's influence extends also to Great Britain where Wyburn-Mason, London neurologist, published his work on "*Trophic Nerves*" in

1950,³² showing his radicalism of thought in the sense of relational pathology. This neurologist stated, for instance, that "any influence acting on a tissue does so first by acting upon the unmyelinated fibres of the tissue before it affects other constituents. Inflammation merely means nervous activity". His radicalism is shown by the motto of his work: "The beginning of wisdom is to unlearn that which is taught", an old saying of Antisthenes.

The culmination of holistic ideology is reached in the work of Kurt von Neergaard. This man is professor of physical medicine at Zürich, Switzerland. His studies on "*Katarrhinfection*" (1939) led him into holism, or "*chronoholism*". He accepts individuality as a basic quantity of all life. His work, "*Dynamische Reaktionspathologie*" was published in 1946. For him, the word "dynamic" means both functional and historical; therefore, he considers *Time* an essential element of *Disease* so that his "holism" becomes a true "chronoholism" in the sense of F. G. Donnan³³ who has originally created the term. This man, a theoretical biologist, understands under "chronoholism" the occurrence of the historical element in a biological phenomenon, in distinction from a non-historical or merely physical phenomenon. The first is expressed by an equation that differs from the mathematical expression of the physical phenomenon by an additional integral member only. By such equations he tried to prove that theoretical physics is the simplification of theoretical biology.

Another small group of men, around the Stuttgart periodical *Physis*,³⁴ represent similar views and they are the exponents of *holistic pathology* today. Among them we find Pascual Jordan, the quantum biologists of Rostock, Adolf Meyer-Abich, the philosopher at Hamburg, and Karl Kötschau, professor of biological medicine in Jena. Their work on the "echelons of reality", on Bohr's biophysical uncertainty relation or complementarity, and on the mental procedure of "holistic simplification" is a remarkable effort to exploit the achievements of microphysics for biology. They state, for instance, that

"any physico-chemical interference with the operation of a living organism will produce physico-chemical results only, and never biological results, since such interference will kill the characteristically organic or organismic in advance to the living reaction; hence, biophysics and biochemistry will always remain only the 'biology', or rather physical chemistry of *cadavers*" (1936). That is the reason why the physico-chemical and biological qualities of organismic systems are complementary complexes.

The holistic ideology distinguishes six *echelons of reality* (in ascending order): (1) mechanical (classical physics), (2) physical (nuclear physics), (3) organic (biology), (4) psychic (psychology), (5) (sociology), and (6) historical (the cultural sciences). Uncertainty relation or complementarity (Bohr) develops when a higher echelon of reality is being explained with the theoretical means of a lower echelon. Explanation should proceed from the higher echelon to the lower by reducing the dimensionality of the higher to the dimensions of the less complex echelon. This procedure is called a "*holistic simplification*" (Kötschau, 1936).³⁵

The holistic approach to pathology and the new principles of scientific research which developed from the anarchy of physics are gradually gaining weight also in the American clinics and laboratories as it is manifested by Selye's theory of *alarm reaction* and of adaptation syndrome (1950).³⁶ Pathology of the whole man is coming in the place of pathology of the dead parts of man. More and more of us believe that the essential element of disease, regardless of its particular point of attack, is the shock to the existence of the individual caused by the disturbance of a well-regulated functioning of the organism (Robbins; 1950).³⁷ The physician's goal is then to provide a possibility of existence in spite of disturbance and defect (Goldstein, 1940).³⁸

Man's effort will continue to penetrate into the fundamental nature of things, in the macrocosmos as well as in his own microcosmos. Whether he will ever be able to

understand it fully is a question and matter of speculation. Yet, in 1936, Ludwig Aschoff pessimistically announced: "The pathologist as a human being must be fully conscious of the fact that he will not be able to unveil the fundamental secrets of Creation by any way of approach".³⁹

We should accept this for the truth, and for the ultimate fate of metaphysical speculations in biology and pathology. And this truth has not much changed since 1839 when another pathologist, the pioneer American Samuel David Gross wrote:⁴⁰ "Of the essence of disease, very little is known; indeed, nothing at all; nor can the utmost ingenuity hope to remove the veil which still envelops the subject. With this, indeed, every philosophical inquirer after truth should be contented, remembering that the secrets of Nature are not easily detected, and that to God alone belongs the knowledge of the intrinsic property of things".

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NAVAL MANAGEMENT AND NAVAL PREVENTIVE MEDICINE COURSE



Official U. S. Navy Photo

Twenty-two medical officers of twelve nations were greeted by Rear Admiral Bartholomew W. Hogan, The Surgeon General of the U. S. Navy, on September 8 at the National Naval Medical Center, Bethesda, Maryland. These officers will participate in intensive review and workshop type courses in military hospital management and preventive medicine during the fall months of this year.

Front Row (L to R): Capt. C. B. Galloway, MC, USN; Cdr. Saadetdin Tolga, Turkey; Capt. Chung-Su Kim, Korea; RADM Tien-Shiang Yu, Taiwan; Gen. Abolfazl Moghbel, Iran; Capt. Yoshio Onuma, Japan; Capt. Antonio O. Etcheverry, Argentina; Cdr. Rogello Sopo Bareto, Cuba; Capt. N. D. Lill, MC, USN.

Second Row (L to R): Lt. (JG) Alfz de Navio Cunto, Ecuador; Capt. Juan de Corbeta Losno, Peru; Capt. Aminoll Azari, Iran; Maj. Domingo E. Alarcon, P.I.; Cdr. Rudolf Probst, Germany; Maj. Julian M. Venzon, P.I.; Lt. Shih-Chuang Feng, Taiwan; Lt. Oktay Akkent, Turkey.

Top Row (L to R): Lt. (JG) Juan de Vega Gonzales, Cuba; Lt. Rene A. Migueles, Chile; Capt. Luis Noziglia, Chile; Cdr. Hsuang-Ying Lin, Taiwan; Lt. Ayhan Ogan, Turkey; Lt. Bunzo Nishi, Japan; Lt. Kamil Tamersoy, Turkey.

Periodontal Therapy

A report on the latest developments as presented at the XII International Dental Congress in Rome, and the VIII Congress of the Israel Dental Association—1957*

By

LIEUTENANT COLONEL GEORGE G. TRATTNER, DC, USAR

IN THE numerous papers on Periodontology presented in Israel and Rome during the conventions, stress was placed on the concept of early recognition and treatment of periodontal lesions. As is the case in so many other bodily ailments, conservative early treatment is far better from every standpoint than is late radical treatment. Early treatment consists of routine removal of all calcareous deposits, elimination of all areas of food impaction, and the balancing of occlusion by selective grinding and orthodontia.

Where this early treatment was not instituted and we are confronted with advanced periodontal cases, we must learn to consider the type of lesion or lesions we are dealing with. We must learn to evaluate the inadvisability of saving certain teeth where destruction has been so extensive that in so doing, we are merely opening up avenues of further destruction. The importance of close cooperation between the dentist and the periodontist was indicated with broad hints that the best results can often be accomplished when both efforts can be combined in the skills of one man. The dentist who wishes to really perfect himself in the art and science of dentistry should be able to evaluate the periodontal problem, institute proper treatment, and carry through the correct dental procedures, such as splinting, mechanical closure of contact points, etc.

In the description of the surgical elimination of periodontal pockets, thoroughness of procedure was stressed. Just as the elimination of any abnormal growth in the body necessitates adequate avenues of approach in order to give visual and mechanical accessibility—so does this apply in the surgical re-

moval of periodontal pockets. In the posterior part of the mouth reduction of the interdental papilla is less of an esthetic consideration so that complete accessibility and removal of pathology is possible. In the anterior portion of the mouth where esthetics must be considered, the pockets must still be eradicated with the idea in mind of maintaining gingival appearance.

If it is decided before starting surgical procedures that multiple splinting will also be necessary, it is advisable to prepare acrylic splints in advance (the shell procedure is preferred). The teeth in the area are then prepared for full coverage, preferably by the use of a high-speed rotary drill, and then with the interproximal spaces wide open and accessibility at its maximum, surgery can be accomplished, and the pockets eliminated. The bleeding can then be controlled by hemostatics and the acrylic splint inserted with a sedative packing. This splint will serve to protect the prepared teeth and the gingival tissues, and immobilize and balance loose teeth. These splints are left in place for a week to ten days, removed for observation and debridement of the affected areas, and then replaced. By proceeding in this manner from area to area, the entire mouth can be treated, splinted to tighten loose teeth, and at the same time restored to correct functional and esthetic relationship. When full healing of pockets and tightening of teeth has been accomplished, the permanent restorations can be made to follow the blueprint provided by the temporary splints. This procedure can be carried out by the combined efforts of the dentist and the periodontist—but it is evident that the well-rounded individual dentist should be able to accomplish it alone.

Further reports were received on the more extensive surgery needed for the treatment

* Presented as a Training Project for the Surgeon General, U. S. Army.

and elimination of the infra-bony pocket in periodontal therapy. Here again, it was pointed out that the all-important factor was the pre-clinical diagnosis of the condition, and then the carrying through of the plan for the eradication of the pocket.

The interpretation of periodontal disease processes as approached from the standpoint of tissue response to injury, was discussed. It was shown that, basically two related principles characterize all disease processes:

- a) "If a disease changes the morphology of an organ or part of the body, the resultant functional capacity of that organ or part must gradually alter, and;
- b) conversely, if a disease process changes the function of an organ or part of the body, its morphology must become modified."

With these general rules in mind, the following two biologic factors were pointed out in connection with periodontal disease and therapy:

1. "The architecture of the investing tissues of the teeth expresses the functional requirements of the tissues; good anatomic integrity within and between both arches, assumes the most favorable response to functional demand.
2. Periodontal diseases are disturbances of the supporting tissues of the teeth that may be seriously aggravated by occlusal and arch-form disharmonies. Objectives to be attained in this work were listed as follows:
 - a) To accomplish good form as a specific phase of therapy within the total structure of the treatment plan for a periodontal problem.
 - i) Good intra-arch form with the establishment of proper contiguous tooth-to-tooth relation.
 - ii) Good inter-arch form attained by the harmonious correlation of the temporo-mandibular joint with the musculature, with tooth-to-tooth contact in the terminal hinge position closure."
 - b) To encourage optimum function for

the presentation of the supporting apparatus of the teeth.

Techniques were then described designed to functionally reposition pathologically migrated teeth in order to carry out the above mentioned principles. Various types of splinting procedures were described to be used in periodontal therapy. Among these were silk ligature and acrylic, wire ligature and acrylic, intradental wire and acrylic, orthodontic bands and fixed removable acrylic splints. Indications for splinting with the various materials was discussed and also methods used in each part of the oral cavity. Care of the mouth while splints are in place and results to be expected from the use of these splints was also discussed.

An extremely forceful paper was presented titled *Dynamics in the Diagnosis and Management of Chronic Periodontal Disease*. In this paper it was stressed that lateral force has a damaging effect upon the supporting structures of the teeth. It was pointed out that the term "dynamic irritation" more appropriately describes the physio-pathological phenomenon, than does traumatic occlusion. Periodontal trauma is fundamentally not an injury, but a chronic irritation of the periodontal structure produced by lateral force which exceeds the physiological resistance and the adaptive capacity of these tissues. The procedure most often used to correct these abnormal forces is called equilibration. However, the mere balancing of an occlusion as in balancing full dentures is not sufficient in cases of secondary dynamic irritation. Immobilization by fixed splints, combined with bridgework where teeth are missing, is indicated in these cases. There were several discussions of the problems confronted when pathological migration of teeth further complicate a periodontally-involved mouth. It was pointed out that several forces are present in the functioning masticatory apparatus to counteract the tendency of teeth to migrate. They are:

1. Occlusion and articulation contact.
2. Proximal contacts.
3. Growth.
4. Action of the lips, cheek, and tongue.

If a disturbance occurs between these forces, the equilibrium is destroyed, and pathological migration will result. It then becomes necessary to restore the resultant migrated teeth to their proper position in the arch by means of ligature, orthodontia, restorative splinting, or a combination of all three.

A new concept of vaccine therapy in periodontal problems was discussed. This treatment, it was stated, is limited solely to cases of pyorrhea alveolaris. Treatment consists of placing in contact with the dermis, laid bare by means of a vesicant, a vaccine prepared from the streptococcus contained in the gingival exudate. (Note: the writer is rather skeptical of the results of this work unless it were accompanied by all or most of the other accepted therapies.)

From the Argentine came a report on Periodontal disease in infancy and adolescence. Here, the great importance of early recognition is stressed, since most dentists do not expect to find periodontal disease in these young mouths. Usually they are kept so busy in the repair of carious lesions that other less evident problems go unrecognized. The result is that by early adulthood the periodontal disease has seriously developed. The chronic marginal gingivitis is usually the earliest recognizable lesion. Basic treatment should be started, such as teaching of good oral hygiene, improvement of diet, and correction of malocclusion. If the condition persists after these basic "corrections," then we must assume that this is a true pre-periodontal disease with the possibility of future destructive action. Proper care at this early stage is essential in order to avoid these complications.

From London we had a fine report on bone implants and their application to periodontal diseases. The author has utilized several types of bone implants in the treatment of various forms of bone loss due to periodontal disease. Three types of bone have been employed—autogenous, homogenous, and heterogeneous. The indications suggested for the use of bone implants were:

1. The treatment of intra-osseous pockets with fairly substantial loss of bone.

2. Raising the level of the alveolar crest interdentially.

The contra-indication are intra-osseous pockets where the bone loss is very limited, although the pocket may be deep and the intra-osseous pockets lying mesially to badly tilted teeth.

Slight preference is given to the use of heterogeneous bone. This bone is an anorganic bovine bone rendered free of organic content by means of ethylene diamine. The results reported were quite good, and further work should be encouraged.

From New York came a report on repair of gingival defects by a horizontal flap operation. This seems to be indicated most often in the lower incisor area, and is associated with a high insertion of the lower labial frenum. Since the attached gingiva is absent from the tooth involved, the alveolar mucosa is under mechanical irritation. Because routine treatment, including frenectomy, does not entirely solve the problem, an attempt is made here to correct the defect by a horizontal sliding flap operation. The operative procedure is as follows: Incisions are made on each side of the defect, and a horizontal sliding flap is used to cover up the exposed root surface. This plastic operation is often confused with frenectomy.

SUMMARY

In summarizing the periodontal presentations in the two congresses, I have not found any really new approach to the periodontal problem in dentistry. Stress is still made, and rightly so, upon the importance of early recognition, proper diagnosis and then correct treatment.

These relatively simple procedures should be mastered and fully understood by the general dentist, and if possible, he should be able to perform these services. The periodontist is needed only where the dentist either does not choose to do it, or where he feels that he cannot adequately handle the situation.

730 Fifth Ave.

New York 19, N.Y.

The Land of the Rising Sun

By

AMOS R. KOONTZ, M.D.

I BELIEVE that Japan is a country that both respects and needs the United States. My feelings with regard to Japan have undergone a violent change since the end of World War II. Before that war I considered the Japanese obsequious on the surface and scheming beneath the surface. During the war I spent almost four years in the Pacific and cordially hated the Japanese, principally because of their methods of fighting, which were entirely alien to those of the Western world. Since the war, however, I have read a great deal of Asiatic history and now know that the Japanese fought just as the Asiatics have always fought since Genghis Khan. War to them was not a game (following the rules as in cricket), as it had often been in the Western world, but a means of survival, and no quarter was given. They fought for keeps, as they always had, and not simply to settle a matter of abstract principle. Why then should they change their method of fighting simply because they happened to be fighting us?

Two visits to Japan, one in 1948 and one in 1955, resulted in my doing a complete about face so far as my attitude towards the Japanese was concerned. I now frankly like them. Furthermore, I have seen enough of the various countries of the world to make me believe that most peoples and most nations are essentially good. When they go wrong, it is generally because they have had bad leadership.

Dr. Bowles, of Honolulu, told me in 1948 that he had spent 22 years in Japan before the war. He spoke very highly of the Japanese, said he liked them, and thought they were fine people. He said, however, that they had one fault—they would follow any dominant leader, good or bad. (Isn't that true of most any people?—We have seen it happen in our own country.) They followed Tojo and then they followed MacArthur. Dr. Bowles felt that the future of Japan depended

on whether they had good leadership or not. That, of course, was only to express a universal truism.

This is not the place to discuss the causes of our war with Japan. There was undoubtedly some provocation on both sides. However, abundant documentary evidence can be produced to show that many of the best of the Japanese leaders did everything they could to prevent the war and many were heartbroken when hostilities began. Prince Konoye was deeply distressed because of the failure of his efforts when Premier (just before Tojo) to prevent the war. He many times vainly sought a conference with our President in an effort to solve our difficulties. Many Japanese have told me that they thought that their War Party, as headed by Tojo, was wrong in creating the provocation for the war.

No article about Japan would be complete without some mention of their magnificent scenery. In the first place, their vegetation is unique and beautiful. One never gets tired of looking at the bizarre forms of their beautiful trees. The Inland Sea with its bordering mountains is magnificent. Of course Mount Fuji (Fujiyama—Fuji-san) is incomparable. Every Japanese feels that he should climb Mount Fuji at least once. Someone has said that anyone who does not climb Mount Fuji is a fool and that he is a worse fool if he climbs it twice. I belong to the first variety of fools and plan to remain that way. However, the scenery is beautiful all over the islands, with mountains, valleys and lakes everywhere. The mountain scenery around Nikko is breathtaking. There are the beautiful Kegon Falls—320 feet high with rapids galore all around. Then there is Lake Chuzenji on top of the mountains, surrounded by more mountains still. Everywhere the country is neat and well groomed. Seldom does one ever see a weed. Even the mountainsides are partially terraced with

neat and attractive looking rice paddies. Japan does not produce enough food for her population so all available land must be tilled.

And speaking of scenery, certainly not the least of the attractive natural scenery of Japan are the Japanese girls. A great many people have the impression that the Japanese are small and squat people. That is true of many of the girls that one sees on the city streets, who are short with very sturdy legs, but these do not represent the *crème de la crème*. Many of the Japanese girls are tall, slender, graceful, and beautiful, just as many of the Chinese girls are. I went to see the Rockette show at the Kokusai Theatre in Tokyo. There were 300 girls, all beautiful and shapely, but with legs possibly not quite up to those of our girls or to those of the Chinese. The theatre is the largest in Asia. The stage is 80 feet wide with extension wings at each end. There is also a runway in front of the footlights. The show was an oriental adaptation of a Broadway revue. It was excellently done. The stage settings were beautiful—mountains, waterfalls, fountains, etc. In fact, the stage settings were the prettiest and most elaborate I have ever seen except at the Folies Bergere in Paris. Nearly all of the music was American music. One scene ran right into the other—no delay or intermission. There were beautiful girls every place—on the stage, in the wings, on the runway in front of the footlights, and also down the aisles at times. Really a worthwhile evening!

Japan has many deluxe hotels. One of the best is the Imperial Hotel in Tokyo designed by Frank Lloyd Wright as an earthquake-proof hotel. It has been proven to be so, as it has withstood many severe quakes since it was built. The Fujiya Hotel, a resort hotel in the mountains, is a lovely, attractive and comfortable hotel, with excellent food, situated in an exquisitely beautiful place with waterfalls everywhere around. The Fuji View Hotel on another side of Mount Fuji is another hotel of the same class.

The Japanese are said to be great copyists, which is probably true. They are said to copy foreign books wholesale, paying no attention

to copyrights. I saw an Otis elevator that had its name changed to something else. However, no one can deny the fact that their art is original and their *cloisonne* the world's best.

The Japanese trains are clean, comfortable, and well serviced. They have neatly dressed uniformed hostesses and waitresses. The hostesses wear uniforms similar to those which airplane hostesses wear and the waitresses wear caps and aprons. Trains invariably start on time and arrive at their destination on time, barring some tremendous catastrophe. In one car in which I rode, there was a "Lavatory, Western style" and a "Lavatory, Japanese style" at opposite ends of the car. Each was for both sexes. The latter was oval shaped to be squatted over with the head to the wall and a porcelain shield to keep urine from splashing. In the Western style lavatory a wooden seat was hanging on a rack beside the toilet bowl, to be used or not as desired.

Some Japanese customs seem very strange to a Westerner. For instance, if a motorist strikes and injures a person, he does not dare touch the injured person, because if he does, he will have to pay all of the injured person's hospital expenses and see that he gets a job when he gets well. If he dies, he has to bury him. The result is that no one touches the person he injures, but just lets him lie there and bleed, until the proper authorities come along to render aid.

One week end each year is set aside for the annual return of Japanese ancestors. The Japanese clean their houses thoroughly for them. They are supposed to come in from the sea sometimes during Saturday night. On Monday at midnight those who have lost ancestors during the last year put to sea a little boat for the return of the ancestors from whence they came. The boat contains food for them and also a lantern, which when it burns down to a certain point sets the boat afire so no one else can get the food.

In medicine the Japanese for several generations have followed the German system of medicine rather than the English or the American system. This means that their medical courses consist principally of didac-

tic lectures with very little laboratory or clinical work. Also in their hospital training they follow the German preceptor system, which results in the training of a few highly qualified specialists but not the large number which the American residency system produces. Japanese medicine is at the present time undergoing quite a transition, just as American medicine did in the early part of the century. One of the men who has been most active in this change is Dr. Kusama, Professor of Preventive Medicine at Keio University Medical School in Tokyo. He is an M.D. from Stanford and a D.P.H. from Johns Hopkins. He is trying to introduce American methods in Japan both in the medical schools and in hospital training. Before the war there were 70 medical schools in Japan, now only 46, the bad ones having been eliminated. Formerly there were 8,000 graduates a year (most of them poor), now only 3,000. Formerly there were no entrance requirements for medical schools. Now they have entrance requirements of at least two years of college work. Until recently there were no examinations for entrance into practice. They now have national examinations which are required before a doctor can practice. When the examinations were first put in, 80 per cent to 90 per cent of the graduates of the good schools passed, while only 25 per cent of those from the poorer schools. This means of course that there are a lot of very poor doctors in Japan, just as there were in this country in the early part of the century. Some of their schools were little more than diploma mills, just as some of ours used to be. However, if the Japanese persist in the course which they have started, the chances are that in another fifty years the general level of medical education will be very high.

Dr. Kusama has also succeeded in getting a requirement of one year's rotating internship as a prerequisite to practice. He says though that it is hard to get the Japanese to change from the German to the American system. Most of the Japanese who come to the States to study are young Japanese and

on return to Japan may have little influence with the strongly entrenched professors. He hopes to use his medical school as an example, and also hopes to get Japanese professors to come to the States in order to see for themselves the advantage of our system.

An evidence of the changing attitude of the people in general toward medicine is the fact that formerly 80 per cent of the nurses who entered nurses training did so without their parents' permission. This took a lot of boldness on the part of a Japanese girl. In Japan children feel honor bound to obey their parents even after they are grown. Younger brothers, even though grown, were supposed to obey their older brothers. This is passing. Now only 25 per cent of the nurses entering training school do so without their parents' consent—an evidence of a liberalization of the thinking of the Japanese.

The Japanese surgeons whom I saw were skillful with their hands although their operating rooms would shock the average American surgeon. As a rule there are two or three tables in the same room without even screens between them. The floor is apt to be littered with blood, and sometimes the benches with bleeding organs just removed. Rubber gloves are not universally worn and when worn are not changed between operations but simply washed off in soapsuds and then permanganate solution. Some surgeons wear cotton gloves over their rubber gloves. The gloves are often too large for the hands of the surgeon. No American surgeon would think of working in such ill fitting gloves. The sterile technique is very casual, nurses and assistants not being very careful about not touching non-sterile bystanders. Strands of fly paper are hung from the ceilings to catch flies.

I saw one very skillful surgeon do seven operations in three hours. He had three assistants and three scrub nurses. The teamwork was beautiful. His assistants closed for him. As soon as he left one case, another team had the next case ready for him so all he had to do was to walk over to the next table and start operating. The first case was

a carcinoma of the midportion of the esophagus, and this took an hour. The patient was lying on his left side. The surgeon made a thoraco-abdominal incision without splitting the diaphragm. He removed some costal cartilage in order to tie the internal mammary arteries. He then spread the ribs (did not take out any), retracted the lung, ligated the azygos vein, cut the vagus nerve, ligated, cut and cauterized the esophagus above and below the lesion and removed the part containing the lesion. He then closed the thoracic wound, turned the patient on his back, and freed the stomach. He then swiftly and dexterously made an opening in the left side of the neck and brought out the stump of the proximal end of the esophagus. The stomach was then brought up to it subcutaneously and the two were anastomosed. In the entire operation the azygos vein was the only vessel that was individually ligated. All the other ligations were mass ligations made by thrusting a Reverdin needle through a large mass of tissue, threading it, pulling back, and ligating the entire mass—generally the size of a finger in diameter. Shades of William Halsted!

Two of the cases were carcinoma of the stomach with metastases to the liver, which he only opened and closed. He did a partial gastrectomy (Bilroth I) in another patient simply because the patient had a history of pain for three years. The laboratory and x-ray findings had been entirely negative and no pathological lesions were found at operation. In spite of this, partial gastrectomy was done. He then removed a huge kidney tumor, with skill and dispatch. Then he did a radical mastectomy for carcinoma of the breast, but this was rather sloppily done—the axilla was not thoroughly cleaned out, although there were involved glands there. The last of the seven cases was a stricture of the rectum.

In none of these cases was any blood used except in that of the carcinoma of the esophagus and here only 200 cc. The Japanese are reluctant to give blood and therefore blood is scarce. However, they were fine about giving blood for our own soldiers during the

Korean War, but don't like to give it in their own hospitals.

More of the older Japanese surgeons speak German better than English, because they were under German surgical influence for so long. English is now being taught in the schools though and it looks as if the next generation of Japanese medical men will all be speaking English.

In Osaka I saw a Japanese professor of orthopedic surgery, who had spent some years at the Mayo Clinic. He had many wards full of his cases. He removes the carotid body on each side for rheumatoid arthritis and for Marie-Strümpell's disease. I could not get the rationale of this. However, he showed us many cases now walking about whom he said had not walked for years before he removed their carotid bodies.

It is obvious that our occupation had quite an impact on Japanese medicine. Before the occupation the Japanese were doing very few autopsies. Now they are doing a great many. Undoubtedly the ancient custom of "face saving" had something to do with this. If the pathologist did an autopsy and found that the patient died from something entirely different from the diagnosis made by the attending physician, the attending physician lost face. As a result the anatomical diagnosis was not always factual. They are apparently now becoming a little more realistic about such matters.

Health conditions in Japan, while far better than those in most parts of Southern Asia, especially India, are far from what they are in the United States. In spite of this, the average length of life in Japan is only about ten years below ours. In India a few years ago the average length of life was only 27 years. Tuberculosis might be said to be rampant in Japan. Six per cent of the population have tuberculosis, 3 per cent of which is active. In the United States only 0.4 per cent of the population have tuberculosis. Hospital beds are so short in Japan that only one out of fifteen TBC patients can be hospitalized. In one of the Japanese Defense Force hospitals which I visited, 70 per cent

of the patients had tuberculosis. They operate on 10 per cent of their cases. In our Fitzsimons Army Hospital about 50 per cent of the cases are operated upon. Most tuberculous patients in Japan are treated at home. This, of course, means that the patients with active tuberculosis are constantly spreading it to other people. The TBC death rate in Japan is 180 per 100,000. It was the same in Los Angeles in 1910, but it is now 14 per 100,000 there. In India it is 300 per 100,000 population.

There is also much surgical tuberculosis in Japan—tuberculosis of the bones, joints, glands, and intestines. Pott's disease of the spine is very common. Pasteurization of milk and elimination of cavities in pulmonary tuberculosis have been responsible for the decrease in surgical tuberculosis in the United States. Both tuberculous meningitis and military tuberculosis have decreased for the same reason.

Other diseases, such as osteomyelitis, typhoid and tetanus are much more common in Japan than here. Schistosomiasis is common in some parts of Japan.

With regard to sanitation, I think it is only fair to say that the attitude towards it would be considered unique in the United States. I have seen people using the water from a roadside stream in a village for brushing their teeth and for washing themselves and their clothes and at the same time using the stream as a latrine. Sewerage systems as we know them are unknown; hotels have their own systems with septic tanks. However, it would not fit in with the Japanese economy to use sewage disposal systems universally. The night soil is too valuable as fertilizer. After the war the Japanese economy required them to use fresh night soil. Now with their improved economy they are able to keep it in vats for some months before using it. The saprophytic bacteria are supposed to kill the pathogenic bacteria. A temperature of 43°C. will kill the eggs of *Ascaris* and will also kill *Amoebae*.

Our armed forces found that in shipping vegetables from the United States there was

a 25 per cent loss, and a 15 per cent loss in fruit, in crossing the Pacific. In 1955 we were buying fruits and vegetables locally from farms that had agreed to use commercial fertilizers instead of night soil. The farmers were watched and the soil was examined by our laboratory people for *Ascaris* eggs. There was very little cheating. An occasional farmer, however, would buy from a night soil farmer and sell to ours. The question of Japanese food handlers was a problem because even if they were examined and found to be satisfactory before employment, they might become infested immediately afterwards from eating Japanese food. It was felt that the danger from food handlers was greater than that from Japanese fruits and vegetables. The amoebic carrier rate in our troops was 10 to 15 per cent. It is 10 per cent in some parts of the United States.

I asked an old Japanese who had spent a couple of years in this country and who spoke English well, what he thought of our occupation under MacArthur. Without any hesitation he said that he thought MacArthur was the greatest man of this century. He said that he did exactly the right thing for Japan at the right time. He had seen him many times leaving his office in Dai Ichi Building. In 1948 I myself had seen, every afternoon, huge crowds of Japanese gathered around the Dai Ichi Building completely blocking traffic, simply waiting to see MacArthur leave the building and get in his car and drive away. That happened every afternoon for years. When MacArthur first arrived in Japan after the surrender, he landed at Atsugi, about 25 miles from Tokyo. He drove to his temporary headquarters in the New Grand Hotel in Yokohama. On driving through the streets of Yokohama, the streets were lined with Japanese, all with their backs to the streets—an honor they had previously paid only to the Emperor, as someone too high and mighty for them to look upon. My old Japanese friend told me that when MacArthur was recalled, the Americans lost prestige. He said that when MacArthur left Tokyo, very early in the morning, the streets

were lined with Japanese all the way from the American Embassy, where MacArthur lived, to Haneda Airport (15 miles away) and that many of them were weeping. The old Japanese said that MacArthur had been "the Emperor of the East." He said that many of the older Japanese, like himself, were sorry that MacArthur did not call on the Emperor before he left. (I am sure that MacArthur had very good reasons for not doing this.) He said that the older Japanese, like himself, would die for the Emperor, but that the younger generation did not feel that way.

I asked this old Japanese what he had thought of the war while it was going on. He told me that he had not thought that the Japanese would be defeated until January 1944. He said the Japanese people were given false information with regard to their victories all the time. He had thought that there would be a negotiated peace. He didn't think that the Japanese could win, but didn't think that we could either, because of the long distance of the fighting from the United States.

While the Japanese are apparently very friendly towards us, I wonder if we are treating them in a way to cultivate that friendship. Many of them are waitresses in our messes, stenographers in our offices, nurses and interns in our service hospitals. All whom I saw were courteous, friendly and warm. The following incident is an example of conditions which are certainly not conducive to friendship. Being in Japan as Consultant for the Surgeon General of the Army, I was billeted in Army billets and ate in Army messes. One morning on going down to breakfast, in a Tokyo hotel taken over by us, I found a young Japanese doctor, who was an intern in one of our Army hospitals, waiting for me, as he was to go with me, another consultant, and Colonel (now Brigadier General) Forsee—Chief Consultant in Surgery for the Far East Command, to a Japanese civilian hospital that morning to act as interpreter. I asked the young Japanese doctor if he had had breakfast with me. He said no. I invited him in to breakfast with me.

The Japanese girl (one of our civilian employees) at the desk at the entrance to the dining room said that Japanese were not allowed in our mess. I explained that the young doctor was one of our staff doctors and was going to take us to see a Japanese hospital that morning. The girl was adamant—she was obeying her orders. I asked for the manager of the mess, but he couldn't be found. The highest authority I could muster was a Pfc. acting as mess sergeant. After much hesitation I finally talked him into allowing the young Japanese doctor into the dining room with me. After we were seated, the Pfc. came over and said that some officer, who was having his breakfast, objected to the Japanese being there. The Pfc. said that he could feed the Japanese doctor outside (in the kitchen, I suppose). I told him he would do nothing of the sort and that if the Japanese left, I would leave with him, and asked him to make up his mind. The Japanese stayed. He said that he was sorry to embarrass me. I told him that the shoe was entirely on the other foot, that I was not in the least embarrassed, but was damned mad at his being embarrassed by the rudeness of our people. We expect the Japanese people to be our bastion of defense in the Far East and then treat them in this shabby fashion. I do not believe in being soft toward them, but certainly we should treat them with common courtesy. And remember that this incident occurred more than three years after the peace treaty was signed. The young Japanese doctor was an exceptionally nice looking and attractive chap with a quiet manner, soft-spoken voice, and the embodiment of courtesy.

If the things I have said about the Japanese are true, how then are we ever going to avoid frictions with them and to accommodate our differences with them? Certainly most differences between nations are due to rivalries in commerce and these are occasioned by the natural instinct for self-preservation. The object of commerce is to obtain the essentials of life. When nations can't get them by peaceful means, they fight for

them. This is but natural. To talk about a political "One World" while frictions and inequalities of commerce exist is futile. Should the world ever become a unified peaceful body of citizens, it will be so because there are no longer any rivalries of commerce. This can only be accomplished by free trade between nations. I realize that such a statement to many people in this country is heresy. I also grant that it is impractical at the moment. Such a consummation would require a long time and a certain readjustment of our economy. However, I do believe that it is time to start. One place to begin might be with free trade between all the English speaking countries. England might not then have to trade with Red China, which is a thorn in our flesh. Or we might begin with the countries in the Western hemisphere. I have been in 18 of the 20 Latin American countries. I have never encountered more friendly and gracious people. They look to us for everything. Hundreds of their young doctors are here for training. Their resources are unlimited and almost untapped. A gradual extension of free trade to them would con-

solidate the Western hemisphere and I believe be good for both them and us. The principle could gradually be extended to other countries. Even if it required a vast readjustment of our economy, would not that be far better than another world war?

Did you ever hear of any one starting a fight with a customer? The choice is simple—between free trade on the one hand and hydrogen bombs and ICBM's on the other. A great many people reject free trade because of the higher standard of living and greater ease we have under a protective tariff. That does not comprise long range thinking. A gradual application of free trade would mean a gradual lowering of our standard of living and undoubtedly some sacrifice. If we do not want to make that sacrifice, the signs of the times point inevitably to the other alternative—a fearsome war in the atomic age. The survivors, if any, would be glad to adopt free trade and a more benevolent attitude towards the various peoples still remaining on the earth.

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November 17, 18, 19, 1958

EDITORIALS

The Convention

TIME passes rapidly and before we know it some of the things we should have planned for earlier are upon us. So it is with our 65th Annual Convention. It is only a month away.

However, it is not too late for you to make reservations for your room at the Statler Hilton. Be sure to mention that you are coming to our convention. Your reservations must be made at once, however, as the closing date is near.

Ladies, have you made reservations for the luncheon, November 18? And how about those tours? All this was covered in a recent letter. We remind you again that we must have those reservations by November 1.

In this issue you have the program. Study it carefully. There are many interesting features.

Reserve officers should remember that credit points are to be given for attendance. Be sure to report to the Reserve Officers Desk to have your attendance recorded.

Your attention to the exhibits, both commercial and scientific is solicited. We have asked those people for their support; they have given it, let's give them ours.

Can we help you?

On Going Forward

MORE than four centuries ago, a Genoese navigator boarded his ship, the "Santa Maria," and set his eyes *westward* to travel over uncharted waters with the hope of arriving at a land already known to some Europeans. Such a crazy idea had never occurred to anyone but Columbus.

The complement of eighty-eight men, 52 on the "Santa Maria," 18 on the "Pinta,"

and 18 on the "Niña" was a hardy lot, full of faith and daring.

We all know the story. Days passed, so did weeks, but finally on October 12, 1492, the admiral and his men set foot on newly discovered land.

Why should anyone want to do it? That question is asked time and time again, and many times these days. Why go under the polar ice? Why explore the South Pole—a land of nothing but ice, snow, and extremely low temperatures? And now, why try to go to the moon?

From the discovery of America has come the concept of a "government of the people, by the people, and for the people." From such a people have come the telegraph, the telephone, the incandescent light, new medicines, and many other helpful items to make this life's journey easier to travel.

We must move ahead constantly. It may be years before we reach the moon but while we are trying to make that journey we are gaining information which will be valuable in many fields of our endeavors.

We cannot stop—we must go forward as Columbus did in his day.

Service to Others

By COLONEL H. P. MARVIN, USA, Retired,
Guest Editor

MOST of us have known some outstanding, selfless person dedicated to the services of others. Such a man is the venerable physician and humanitarian Albert Schweitzer, "Patron Saint" to tribes along the Ogowe River in Equatorial Africa. Truly his service to these peoples has "added and multiplied as he divided it with others." Albert Schweitzer's life is a living example of what that Hindu proverb means "Help thy brother's boat across, and

lo, thine own has reached the shore."

On the other hand too many of us think of our own jobs or professions, and consider our own success in life, in terms of money, hours and benefits. Far too often we forget that greater aim in life expressed so well by Charles Dickens, "No man is useless in this world who lightens the burdens of someone else." Norman MacEwan expressed it this way, "Happiness is not so much in having as sharing. We make a living by what we get, but we make a life by what we give."

Most readers of this fine publication have some connection with the medical profession in one of Uncle Sam's fine services. Those who are physicians, dentists, veterinarians or nurses have chosen to study and to practice professions that are synonymous with service to others. William Osler, one of the greatest physicians, wrote thusly: "'Tis no idle challenge which we physicians throw out to the world when we claim our mission is of the highest and noblest kind, not alone in curing disease but in educating the people in the laws of health, and in preventing the spread of plague and pestilence. . . ." These are eloquent words about serving others.

As we listen to those in various services, especially younger officers, we cannot help but notice that a certain number spend too much time thinking and talking about themselves and their own interests. And, instead of magnanimity, there is sometimes an element of self-aggrandizement creeping into their thinking and planning. Our younger folk including teen-agers are extremely fine—we must never sell them short. Nevertheless, some might well give serious consideration to these sage words of Thomas Jefferson "Every human mind feels pleasure in doing good to another."

Did you ever watch one of the greatest of creatures—a Seeing Eye Dog—escorting his blind master safely through heavy traffic,

around corners, into buildings and onto buses? These marvelous animals are highly intelligent and very alert—yet so quiet, so kind, so patient, so dependable and so extremely devoted. No wonder my eyes "puddle up," as Lum and Abner might say—and a huge lump fills my throat—each time I see one of these beautiful canines. These noble dogs are outstanding examples of dedicated service.

Our lives fill but a fraction of a second in the endless span of history. We are here today, gone tomorrow. No two of us are alike. But most of us have the same inherent philosophy of life. Basically, the great majority of folk are good, they are sound. Most of us want to be friendly, to be helpful, to serve others. But, unfortunately, a few of us have allowed our own selfish interests and pocket-book-consciousness to form a thick, rugged veneer over our own basic goodness. And yet all of us realize that a selfish attitude in a few may well injure the reputation of an entire group.

Some of us are definitely in need of the admonition to take stock of ourselves, to shed our self-centered veneer and to get down to brass tacks. Many of us can find encouragement and incentive in this truism of Confucius, "He who wishes to secure the good of others, has already secured his own."

No truer words were ever penned than these by Grantland Rice, one of the greatest of American sports writers, "For when the ONE GREAT SCORER comes to write against your name, HE marks—not that you won or lost—but how you played the game." And there are none of us so great and none of us so small, but that we can profit by giving serious thought to these few simple words of wisdom left us by King George VI, "The highest of distinctions is service to others."



Around the World

(Series II, No. 26)

By

CLAUDIUS F. MAYER, M.D.

ZANZIBAR is called the "isle of cloves" in a recent book of an American traveller in Africa (F. D. O'maney). If we look at the map, we find the East Coast of Africa, from the holiday resort of Malindi southwards; it is a beautiful and historic coastline, studded with the ruins of dead Arab cities and Persian towns, thriving with rich, ancient culture. The towns, such as Mombasa in Kenya, or Dar-es-Salaam in Tanganyika, are now mostly owned by rich Hindus. Opposite to this coastline are the two large islands, the Pemba Island and Zanzibar Island, forming the *Zanzibar Protectorate*, the dominion of the Sultan of Zanzibar. He also nominally owns the Kenya coastline for about 170 miles length. Though the Sultan is the head of the State, the government is carried out by a British Administration.

Geologically, both main islands are coral formations. Their *climate is very enervating* and hard for Europeans. The humidity is so high that nothing seems to dry. Metal will rust, and bright surfaces soon grow dim. Even the most energetic man is overcome by an extraordinary lethargy. In such a climate one tends to postpone everything for tomorrow. Everybody becomes somnolent sooner or later. Offices open at 7 A.M., and close at 1:30 P.M., for the day. Surprisingly, people do not get ill. Yet, not so long ago, Zanzibar was *the white man's grave*. Now, the fevers, malaria, yellow fever, black-water fever and cholera are gone, and the people have become fat and lazy. The entire population of 265,000 is living in areas which favor malaria. Yet, as a result of 20 years' antilarval work, the town of Zanzibar is now malaria-free.

The two islands, Zanzibar and Pemba, are the centers of the cultivation and export of cloves. There is a fragrance of clove on the

streets of Zanzibar, but at night another fragrance comes from the sanitary carts which carry the "night soil." The men who go around with these carts cover their faces with palm leaves and daub to make them and the indignity of their calling unrecognizable by their friends. It is really hard to list the *smells of Zanzibar*. From the old creek which separates the Old Stone City from the African town of mud and palm thatch, comes a smell like rotten eggs, from the daily growing dump heap in the creek. There is the garlic breath of many Hindus, the smell of cosmetics, the black smell of sweat and urine, the swooning perfume of frangipani in the Arab houses in the European part of the town.

Zanzibar seems to belong rather to the East than to Africa. Its streets are distinguished by certain trades. Westernization is shown by the neon signs and electric lighting. Here are many Hindus and Chinese who work with a minimum of light, ambitiously, but for one purpose only to make more money than the next door neighbor. Once the British Administration attempted to introduce a *regulation of the shop and factory hours*. But this was in vain, and the British created a lot of resentment. The African side of the city is known as the *Ngambo*, which means "on the other side" (in Swahili). It is a city with rather clean houses. The African is very meticulous in his habits and person. His ablutions are long and elaborate. There are many washing places in this part of the city.

A *survey of tuberculosis* was made on the two islands, Pemba and Zanzibar, by a doctor of the Colonial Service. The inhabitants first thought that he was a magician and would work miracles. When the miracles did not come after the tuberculin smear tests, the people lost interest. Moreover, the continu-

ous surveys by government people were quite annoying to the people. Surveys in some schools revealed among the children *great number of skin diseases*, scabies, signs of undernourishment, pot-bellies, crooked rickety legs, etc. Leprosy is still common in Zanzibar. The *lepers* are segregated in a settlement which is run by the Roman Catholic Mission. Another settlement on Pemba Island is in the hands of the government medical authorities.

The political slogan of today is "Zanzibar for the Zanzibaris!" In 1856, the town was the metropolis of East Africa, just about the time when the European "*rush for East Africa*" started. But Zanzibar once belonged to the Sultan of Oman who made it the great center of the Arab slave trade, and finally he himself settled in the enchanting green island. David Livingstone also had a house there; it is now used as a laboratory for clove research.

The *Arabs of Oman*, whose capital is Musqat, had been a seafaring nation since several centuries before Christ. They were descendants of Joktan, the ancestor of the Sabians, and they traded between the Red Sea and India and the east coast of Africa. It was chiefly from Oman that the east coast of Africa was peopled before the arrival of the Portuguese in the 15th century.

Oman itself came into the world news again just about a year ago when tribesmen from the inland began to make trouble. This small independent Arab sultanate is at the *southeastern corner of the Arabian Peninsula* where the Arabian Sea narrows into the Gulf of Oman, an antechamber to the Persian Gulf. It is a coastal plain, with a seaboard of nearly 1,000 miles, a range of hills and a plateau. Inward, it extends about as far as the Great Arabian Desert, the Rub-al-Khali. There is no industry or oil in this country whose only export is dried fish, frankincense and dates. The population, which is chiefly Arab, is less than a million.

It is very hard to make any kind of census in these backward areas of the world. Let us take, for instance, another African country,

the *present Sudan* which has a population of about ten and a half million people. They are spread over a land area of 2.5 million square Km, a territory as large as half of Europe. In 1955/56, Sudan had a *census of its inhabitants* the results of which were published by the Ministry of Social Affairs in Khartoum. There were many difficulties among which the semi-nomad life of the people, and the more than hundred dialects which they speak were some of the worst. Questionnaires were issued with about 27 questions for each household some of which refer to the conditions of fertility and mortality, the number of women, the origin of the head of the household, etc.—The entire Sudan has only *one psychiatrist*. There is no mental hospital in existence. As to mental health, the Sudanese are Mohammedans, and as such they believe that health is to be maintained by the priests of Islam (and not by the psychiatrist who is there to cure). It may seem unwise to attempt a reform of such a social structure or mode of life.

Endemic treponematoses has several varieties which are closely related to each other clinically, serologically, and therapeutically. They are non-venereal types of infections, including (a) endemic syphilis (the *bejel* of Iraq, the *njovera* of Southern Rhodesia, and some historical now extinct forms such as *radesyge* in Norway, etc.), (b) yaws in the tropics, and (c) pinta in Central America. A form of endemic syphilis exists in the Bakwena Reserve of the *Bechuanaland Protectorate*. It is called "*dichuchwa*." This area includes part of the Kalahari Desert. The people, some 300,000 of them, are still living a semi-nomadic life; the Bakwena Reserve has about 50,000 people. Their seropositivity for syphilis varies from 25% to 50%; in addition, there are 1.4%-5% active, and 51% latent cases. The open cases usually occur in the secondary and tertiary stage. A mass therapy by means of penicillin injections and the improvement of hygienic conditions of the people has been suggested by the World Health Organization.

In the Nsukka Division of *Eastern Ghana*,

a mass survey and mass treatment of the population has been carried out against another wide-spread treponematoses, which is yaws. The treatment reached about 95% of the population of ca. 445,000. Among them, 12,000 persons were actively infected with yaws. As a side effect of the survey, the people themselves felt the need of creating local health centers. Seven such centers were built recently.—The *anti-yaws campaign* also continues at other parts of the world. Medical officers at Dudhi Dispensary, in Mirzapur, *Uttar Pradesh*, report that a survey of 70 villages (total population 25,361) showed the high incidence of yaws. At least 5.1% of the population either had suffered or was suffering from the disease. Active lesions, leading to various deformities, were quite frequent in adult people.—In *Indonesia*, the *yaws campaign* is based upon clinical inspection for detection of yaws cases. Thus, all symptomless and latent cases will be missed. It is the assistant nurse, the "djuruk-patek" who examines the people clinically, person by person, and family by family. People who have symptoms are entered in a list of patients for treatment.

Regulation of child birth and family planning is one of the greatest problems in present-day India. Research has been going on for years to find a sure medicament among the indigenous plants which would prevent conception. The laboratories of the *Lucknow Medical College* and the Central Drug Research Institute are examining several plants said to be of anti-fertility effect, such as the *Til*, the *Also*, and the *Methi* plants. The search for birth-control plants is but a part of a concentrated effort of the Indian Council of Medical Research to stimulate domestic manufacture of drugs and to finally eliminate the importation of drugs from abroad. Many plants of India, used by the Ayurvedic and the Unani systems of medicine for centuries, are still little known in their medicinal properties. The laboratory at Jammu discovered, for instance, that the plant called *Rattan jot* is of the same curative effect as *Rauwolfia serpentina*. Another plant called *Neem* (margosa), a tree, is very useful for the treatment

of rheumatism and even for leprosy.

The Medical Service of *Sarawak* observed several strange, sometimes fatal cases of poisoning from the use of *pentachlorophenol* (Santophen 20) as a wood preservative in the sawmills. Most of the affected people were Dyaks who had been working at the dip-tank, sorting timber on the draining board. The chemical is used as a preventive of sap-stain in solutions of from 1½% to 2% in water. The dip-tank is usually made of wood or metal, and is fitted with an inclined draining board onto which the wood is pulled after being immersed in the solution of the tank. The wood is carried by an endless chain, or it is lifted out by a wire hook, or by hand. The men who work with it often have nothing but a pair of cotton shorts, and no protective clothing. Their hygienic and food habits (exclusive rice diet) and perhaps some racial susceptibility make the *Dyaks* easy victims of this industrial poisoning. The symptoms have been known from previous descriptions of Carswell and others: high fever, dyspnea, prolific sweating, abdominal symptoms, terminal spasms. Postmortem examinations showed edema of the brain and of the lungs. The poison probably acts in the same way as dinitrophenol, producing marked increase in the basal metabolic rate.

In the *Solomon Islands*, a democratic (western type) government was introduced in 1948 in the form of the establishment of *Native Councils*. Until then, the chiefs of the individual islands used to ask the consent of the people before each and every communal action. The new Councils are composed of representatives elected by the people themselves. They have the right to pass resolutions of all kinds, including regulations about food and water supplies, about hygiene and sanitation and mosquito control, the care of children, and about old folks. They have the power, with some limitations, to make the local customs become the law of the area. Thus, the *Guadalcanal Council*, which represents 1,900 people, is composed of a president, vice-president, and 23 members. They arrange the annual budget from the tax revenues, and pay the wages of various communal

employees, including the nurses. The Council also provides for construction work of such buildings as the *Council hospitals*, and the hospital dispensaries. They also rebuild and are maintaining two leper settlements as supplements to the Government Leprosarium at Tetera. Council hospitals include a dispensary, a surgical dressing room, male and female wards. They are staffed by dressers and subdressers who are paid by the Council. The dressers are now trained at the Central Government Hospital near Honiara.

In *East Germany*, many people died from infectious diseases at the end of World War II. Thereafter, the public health situation began to improve. Since 1949, about 333 rural dispensaries, and 4,174 nursing stations have been organized. The trouble is that there is a *shortage of qualified doctors and nurses*. The number of general practitioners is especially low, and those who are in such practice are usually overage. About 90% of the newer medical generation become specialists. This situation made a reform of the medical care in the rural areas necessary. It is expected to *develop the rural dispensaries* to real centers of specialized practice, and to recruit a sufficiently large number of specialists and available GPs to form a collective around the dispensary. Such a collective is at present tried out at Greifswald.

At the 1956 meeting of the *Hungarian Biological Society* held at Debrecen, Krompecher and coworkers reported that they were able to prevent the development of rickets and anemia in experimental animals if the rachitogenic diet was supplemented with eggshell. This experimental finding was the basis of some clinical trials in which *ground eggshell* was used for *treatment of anemia in children*. Invariably, the treatment resulted in a very large increase in the number of the red cells, especially when the children were kept in sunny places. The new medicament is so prepared that the eggshell of fresh eggs of hens was obtained from the kitchen, washed, dried at room temperature, and ground in a coffee grinder. Then, the eggshell powder was tyndallized (treated with 60°C heat in an oven for 5 hours on each

of 3 successive days). Thereafter, it was safe to add it to the diet of the child. One gram was given 3 times a day. The treatment should be continued for about 6 weeks for best results.

At the *International Congress of Anatomists* held 9 April at Frankfurt, a new type of condenser was exhibited which fits any type of microscope and permits *three-dimensional vision of the objects* on the slides. The condenser, which is called, *Metrimpex*, is the cooperative invention of Hungarian anatomists and optical engineers. Let us hope that there will be enough money for its wholesale manufacture.

During the Korean War, several European satellite countries sent medical missions to Northern Korea. The most eager to help (under pressure?) seemed to be Hungary which sent a full hospital, together with equipment and medical staff, to the aid of the Korean communists. This *Korean-Hungarian Hospital*, under the direction of a Hungarian doctor, has several departments among which the Pediatric Department is one of the most active. A doctor of this department recently published his observations on the occurrence of *kwashiorkor* in *North-eastern Korea*. The well-known disease of protein deficiency has not been previously reported from this part of Asia, while it is quite common in Indochina. By the way! For the *treatment of kwashiorkor*, the director of the British Medical Research Council Group, sent out for the purpose of research in infantile malnutrition (headquarters: Kampala, Uganda), recommends as supplementary food, biscuits, or a meal, made up of the following ingredients: toasted and ground groundnuts 150 g., wheat flour 50 g., corn flour 100 g., cottonseed oil 25 g., sugar 75 g. Its price is about 12.5 East African cents (ca. \$0.014).

For the *medical service* of the people of *Romania*, various specialist therapeutical institutions have been created. Thus, for instance, 142 outpatient clinics have opened for obstetrical and gynecological work. On the shores of the Black Sea, also in Herculani, Kelimeneshti, and in other spas,

hospitals and sanatoria were constructed for the treatment of rheumatism. In Buzias and Torda (Transylvania) health stations function for the benefit of cardiovascular patients. The scientific work is carried out at the clinics of a number of big towns such as Bucaresti, Kolozsvár, Temesvár, Jassi, Krajova, etc. In the country the *morbidity rate was sharply reduced*. Thus, for instance, more than 200,000 malaria cases were listed in Romania in 1938, while in 1957 there were only 220 such cases. Typhoid fever has also become very rare.

In Peiping the *first Chinese Oncological Hospital* just opened. It has 150 beds, and an outpatient department for about 200 patients. The hospital has medical, surgical, radiotherapeutic departments and a series of clinical and diagnostic laboratories. The institution is equipped with a gammotron and other medical machines of Soviet manufacture.

At the *Third International Conference on the Protection of Civilians* a proposal was made to set up a *world center for the recording of radioactivity*. Several countries have already established their own services for counting radiation in the atmosphere which is performed either by meteorological stations or by the establishments for nuclear physics. Since radioactive clouds can move from one area to another, and the contaminated waters may also run through several countries, the problem of radioactivity is world-wide. The future center, perhaps in Geneva, would issue maps of the radioactive changes of the world's atmosphere, and thus the center would contribute to mitigate the fear of civilian people.

Why is it that in *England and Wales bronchitis* is recorded as the cause of death in over 25,000 people every year, and it accounts for half of the deaths due to respiratory diseases and for 5% of deaths due to all causes? At the same time, the mortality rates in other European countries and in the U. S. A. are much lower. Analysis of the various possible factors in this difference seemed to indicate that the prevalence of the bronchitic symptoms in Englishmen is related to *cigarette-*

smoking. It is the national smoking habits which may, therefore, be partially blamed for the excessive mortality from bronchitis in England and Wales. Now, besides the blaming of cigarettes for the increased incidence of lung cancer, another little evil is attributed to smoking, especially to the habit of blowing the smoke down the nose. This will create a dry and congested nose, a condition in which *nose-bleeding* is more likely to occur. The statistics of the British Health Service indicate an alarming increase of epistaxis in the past decade. Sociologists and national economists may also speculate whether the system of State medicine (and free treatment) has anything to do with the boost in the statistical figures.

Under the auspices of the International Scientific Association of Esperantists, a *new science dictionary* was published at Tokyo in the *Esperanto* language. The new dictionary includes the terminology of 83 various sciences, not to forget thermonuclear physics, philosophy, geodesy, surgery, paleontology, etc.

The *Rockefeller Foundation* has been experimenting in the *rural sanitation of Egypt*. In a number of villages, the Foundation installed wells of the driven type, equipped with hand pumps, and a concrete platform. They were constructed at convenient places, away from unsafe sources of water such as ponds, canals, and open wells. The latrines were constructed of the bore-hole type, and they were installed in all houses where the owners wished them. Now, five years later, a *survey of the wells and latrines* showed a rather pitiful neglect of these facilities. A large number of the wells is no longer in use, mostly because the necessary spare parts for repair were not available. About 60% of the latrines were already full, some of them caved in, and no effort was made to clean them thoroughly. It is evident that, without setting up an organization to be responsible for the maintenance of these facilities of western civilization, Egypt will remain at its ancient level of rural sanitation! . . . *Multa paucis!*

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Captain A. H. Sewing, MC, USAR
Dr. William G. Shemeley, Jr.
Captain Charles W. Shilling, MC, USN, Ret.
Brig. Gen. M. A. W. Shockley, USA, Ret.
Lt. Col. Henry Sigmond, USA, Ret.
Colonel J. F. Siler, USA, Ret.
Colonel Robert Skelton, USA, Ret.
Colonel F. L. Smith, MC, USAR
Colonel William H. Smith, USA, Ret.
Major Gen. Howard McC. Snyder, USA, Ret.
Lieut. Israel H. Spector, MC, USAR
Lt. Col. H. A. Spilman, MC, USAR
Lieut. Henry A. Springer, MC, USAR
Major Gen. M. C. Stayer, USA, Ret.
Major Floyd Stewart, MC, USAR
Colonel Milton I. Strahl, MC, USAR
Dr. Sidney Strauss
Captain M. A. Stuart, USN, Ret.
Colonel Arthur N. Tasker, USA, Ret.
Brig. Gen. Carl W. Tempel, MC, USA
Colonel William H. Triplett, AUS, Ret.
Henry Turkel, M.D.
Lieut. J. W. Turman, MC, USAR
Dr. Phillips Thygeson
Colonel Frederick H. Vinup, MC, Md. NG, Ret.
Captain Frank B. Voris, MC, USN
Colonel S. H. Wadhams, USA, Ret.
Brig. Gen. Charles M. Watson, USA, Ret.
James M. A. Weiss, M.D.
Colonel J. Ralston Wells, AUS, Ret.
Ass't Surg. Gen. Ralph C. Williams, USPHS, Ret.
Brig. Gen. John R. Wood, USA, Ret.
Carl B. Young, M.D.
- Corrections to this list would be appreciated.
EDITOR

ASSOCIATION NOTES

Timely items of general interest are accepted for these columns. Deadline is 3rd of month preceding month of issue.

Department of Defense

Ass't Secretary (Health & Medical)—HON.

FRANK B. BERRY, M.D.

Deputy Ass't Sec'y—HON. EDW. H. CUSHING, M.D.

NATO HANDBOOK

Emergency War Surgery, the U.S. Armed Forces issue of the NATO Handbook prepared for use by the Medical Services of the NATO Nations, has just been released.

There is a Foreword by Dr. Frank B. Berry, Assistant Secretary of Defense (Health and Medical) in which he states, "Due to the close alliance and the interdependence of the NATO nations for medical care of their respective personnel in a major disaster, the need for uniform guidance in the matter of emergency war surgery became apparent."

This 411-page book which is of a convenient size to fit in one's coat pocket should have a broad distribution and should be studied by all physicians. It should be part of every hospital library.

Copies may be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D.C., for \$2.25 per copy.

DOCTOR DRAFT

Unless there is a marked increase in the number of applications of interns who vol-

unteer as reserves a new doctor draft bill may have to be requested.

The Department of Defense requires 1,000 intern volunteers for the Berry plan to assure the physicians it will need next summer.

Young physicians would do well to get their military obligations out of the way early in their professional careers.

IMMUNIZATIONS

The procedure for giving immunizations in the Armed Forces will be simplified. The Armed Forces Epidemiological Board has made certain suggestions.

After the initial series of typhoid-paratyphoid immunization only two booster shots will be given at four year intervals unless persons travel outside the United States, Canada, Alaska, and Hawaii.

Poliomyelitis vaccine will be given to persons under forty years of age.

The tetanus-diphtheria vaccine has been combined.

Other immunizations as cholera, typhus, and yellow fever will be given for travel in specific areas.

VETERINARIANS

There will be veterinarians in the Armed Forces. So says the Secretary of Defense Neil McElroy who recently reversed the decision of former Defense Secretary Charles Wilson.

This leaves the way open for appointments in the regular Army and Air Force Veterinary Corps.

The activities of the military veterinarians have been increasing due to the studies that are being made on food and animals affected by radiation.

Army

Surgeon General—MAJ. GEN. SILAS B. HAYS

Deputy Surg. Gen.—MAJ. GEN. JAMES P. COONEY

PROMOTED TO BG

At an impressive ceremony which took place in the Office of the Surgeon General of the Army September 2, Francis W. Pruitt was elevated to the rank of brigadier general (temporary). The Surgeon General of the Army, Major General Silas B. Hays, pinned one of the stars on while Mrs. Pruitt pinned the other one on the new general.

General Pruitt who has been Medical Consultant in the Office of the Surgeon General now fills the position of Chief of the Medical Division at Walter Reed Army Hospital, the position just recently vacated by Brig. General Thomas Mattingly who retired.

GENERAL MC NINCH TO WRAMC

Brig. General Joseph H. McNinch, MC, who has been Surgeon of the U. S. Army in Japan has been assigned to the Walter Reed Army Medical Center as Director of the Medical Research and Development Command.

Prior to the assignment to Japan General McNinch was Chief of the Personnel Division in the Office of the Surgeon General. He has also been Director of the Army Medical Library (now the National Library of Medicine), editor of the history of the Army Medical Department in World War II, and commander of the Army Environmental Health Laboratory.

TRAINING

Enlisted men and women are trained at Walter Reed Army Medical Center in the Medical Specialist's Advanced Course which has for its instructors Army Nurses and enlisted personnel who have themselves been highly trained.

This course emphasizes operating room technique, emergency medical care and mass casualty management. The instruction is intensive and aims to develop highly qualified



U. S. Army Photo

SERGEANT FIRST CLASS RALPH J. HIGHT AND INSTRUCTOR NURSE 1ST LT. JEANNETTE M. GRAY

technicians who can work with nurses with a minimal amount of supervision in the care of patients. Training aids such as shown are used extensively in the course.

REHABILITATION

Ever present in the minds of the staff at Walter Reed Army Hospital is the matter of



U. S. Army Photo

DIANE BECKETT WEARS "COSMETIC GLOVE"

rehabilitation. This subject is also one that will be considered at the 65th Annual Convention of our Association next month.

Here shown is Diana Beckett who has been fitted with a prosthetic hand made for her at the Army Prosthetics Research Laboratory at Walter Reed Army Medical Center. A "cosmetic glove" which is used over the hand was developed by Mr. Carl L. Nielson and Mr. Clare L. Milton, Jr. These two men have been granted a patent for the glove which can be made to match the wearer's own hand in color and skin texture.

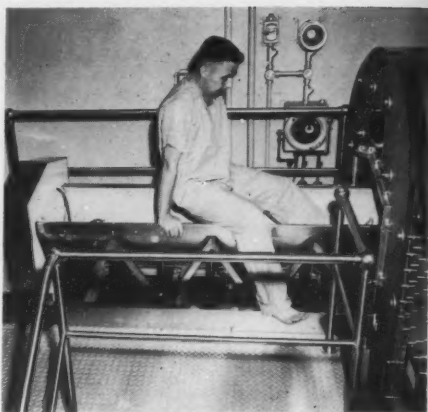
RADIOACTIVE FOODS COURSE

Four veterinary laboratory officers, three from the Army and one from the Air Force; one Medical Service Corps officer and two veterinary officers in the role of observers from the Spanish Army will attend the Examination for Radioactive Contamination of Foods course beginning October 13th for a period of eight weeks, offered at the Walter Reed Army Institute of Research, Walter Reed Army Medical Center.

The course is limited to an enrollment of six and is designed to train laboratory officers in methods of detecting and measuring radioactive contamination of foods and in the basic techniques for the use of radioactive isotopes as diagnostic and research tools. The scope of the training will cover techniques used in assaying different food products for radiocontamination and to a limited extent, identification of the activity. Sufficient background material will be presented in the fields of mathematics, nuclear physics, tracer chemistry, radiation biology, radiological safety and instrumentation to enable the laboratory officer to employ assay techniques and to intelligently evaluate specific problems that may arise in the field.

WHOLE BODY COUNTING

Elements emitting gamma radiation can be quantitated for their total activity in less than four minutes by the Whole Body Counting Facility installed at the Walter Reed Institute of Research, Walter Reed



U. S. Army Photo

PFC. CARL A. CARLSON gets into hammock preparatory to being rolled into the "detector tank."

Army Medical Center, Washington, D.C.

Sponsored by the Armed Forces Special Weapons Project, this facility is the second of its type in the world and the first at a medical installation. The original equipment is at the Atomic Energy Commission's laboratory at Los Alamos, N.M.

With the increasing use of the isotopes in medicine one can almost predict with certainty the installation of like facilities at



U. S. Army Photo

SP5 JACK REDDING checks dials on control panel of the liquid scintillation tank.



U. S. Army Photo

In the Crystal Spectrometer Room ("iron room") the subject sits for one-hour counting period for identification of radioactive element.

every medical center in the United States. Determinations that require hours are reduced to minutes with the Whole Body Counting Facility.

To determine total body radioactivity with this new facility, an individual is placed in a canvas hammock which is rolled into the cylindrical "detector tank" (surrounded by a 5½ inch thick armor-pipe shield weighing 12 tons). In the wall of this tank there is a scintillating liquid. Gamma photons from the natural and acquired activity in the individual's body cause light flashes in the scintillating fluid. These flashes are counted by 30 large photomultiplier tubes. After suitable amplification, the results, recorded on the electronic instruments outside the tank, indicate the total amount of activity in the body. It was pointed out by Lt. Colonel James B. Hartgering that the garment which the person wore must be specially laundered and monitored before use.

Should there be an excessive or unusual type of radioactivity present the next step would be to determine which elements are responsible for the increased activity. This is determined by placing the individual in the spectrometer room ("iron room") erected from seven-inch armor plate and measuring about twelve by six by seven feet. The counting time here is about one hour.

Director of the Walter Reed Institute's Division of Nuclear Medicine and Chemistry is Lt. Colonel James B. Hartgering, MC; Major Kent T. Woodward, MC, and Captain Harry A. Claypool, MC, are responsible for the functioning and activities of the counting facilities; Jack Redding, Specialist Five, who operates the complex whole body counter, is a specially trained technician.

MEDICAL MEETING AT WALTER REED

The first Surgeon General's Medical Meeting which will initiate the 1958-1959 series of four planned meetings will be held at the Sternberg Auditorium, Walter Reed Army Medical Center, November 20 at 8:00 P.M.

The Guest Speaker for that meeting will be Justice William O. Douglas, United States Supreme Court, who will speak on "West of the Indus" and supplement the lecture with Kodachrome slides.

Other meetings planned will be held on the third Thursday of January, March and May 1959.

ASSIGNMENT AT AMMS

Lt. Colonel Edwin S. Chapman, MC, has returned to Brooke Army Medical Center as Director of the Department of Military Sciences at the Army Medical Service School.

Colonel Chapman is a former member of the faculty, once as an instructor of tactics and once as Director of the Department of Training Doctrine.

THIRD ARMY SURGEON

Colonel William D. Graham, MC, has assumed duties as Surgeon of the Third Army the headquarters of which are at Fort McPherson, Georgia. He succeeds Colonel Thair C. Rich who has been transferred to Europe.

Colonel Graham is a graduate of the University of Minnesota School of Medicine. He attended the University of California in 1949 for a postgraduate course in Public Health. He was president of the recent graduating class of the War College at Carlisle, Pa.

ARMY AIR DEFENSE COMMAND

Colorado Springs, Colorado, is the site of the headquarters of the U. S. Army Air Defense Command (USARADCOM). The recently established Office of the Surgeon has been filled by Colonel Samuel Newsom, MC, of La Mesa, Calif.

Colonel Newsom will serve as the principal advisor on command medical matters to Lt. General Charles E. Hart, the Commanding General, and will coordinate medical services provided Army air defense personnel throughout the nationwide command.

PREVENTIVE MEDICINE CONFERENCE

A Preventive Medicine Laboratory Officer Conference will be held at the Walter Reed Army Medical Center, January 12-16, 1959.

TABULATING MACHINES

Colonel John Shaw Billings, an Army surgeon, statistician and librarian, started the punch card system which is so necessary for tabulating machines, back in 1880. He suggested that various data "might be recorded on a single card or slip of paper by punching small holes in it, and these cards might then be sorted and counted by mechanical means according to any selected group of these perforations." The full story is in a recent issue of *Army Information Digest*.

This Colonel Billings who really brought stature to the Surgeon General's Library, later to be known as the Armed Forces Medical Library, and now as the National Library of Medicine, died in 1913 after a prominent medical career. His outstanding work in the establishment of an internationally known medical library makes us wonder if we should not honor him by attaching his name to the National Library of Medicine and call it the "Billings National Library of Medicine."

ARTIFICIAL RESPIRATION

A recently revived method of helping asphyxiated patients to breathe is being used by the Army Medical Service. It is expired

air resuscitation, either breathing directly into the patient's mouth or through suitable respiratory equipment into his lungs.

The procedure has been described as "the best system available" by Army officials, at a time when new weapons could cause greater numbers of casualties than ever before and many lives which might otherwise be lost could be saved by the simple process.

It is now being taught at Brooke Army Medical Center to all personnel at the Army Medical Service School. This includes assigned instructors and administrative personnel, demonstration troops, and students, whether officers or enlisted men and women.

The process will be taught to every physician, dentist, veterinarian, nurse, medical scientist, medical supply specialist, occupational and physical therapist, dietitian, and medical administrative specialist, all of whom report to the school for a military orientation course soon after entering the Army. Most career officers also return to the school for advanced instruction. Thus the procedure will be disseminated throughout the Army in the fastest manner possible.

The process is new in recognition only, for medical history recorded successful resuscitation by mouth-to-mouth breathing as much as 200 years ago. Studies conducted during the past few years, though, have proved the superiority of this procedure in comparison with other methods of artificial respiration in common usage.

In its simplest form, the operator removes any mucus or foreign matter from the victim's mouth and throat, with his fingers if necessary. He then tilts the patient's head back, holds his nose, takes a firm hold of the tongue and chin for control, and, after taking a breath, exhales into the patient's mouth until he sees the patient's chest lift. He takes his next breath while listening for the patient's exhalation, breathing about 12 times a minute for adults and 20 times for children.

A simple nose-mouth mask may be used or a three-way gas mask connection, but the process remains the same—the operator's ex-

pelled breath is still the means of inflating the victim's lungs. By the latter method the operator's hands are left free for other duties, such as carrying the litter on which the patient may be transported while continuing to be resuscitated.

Advantages of the process are many. It forces more air into the victim's lungs. It is more easily controlled by the operator. The operator can continue for a lengthy period of time with no ill effects. It is effective with any unconscious or partially paralyzed patient. No equipment is needed for maximum results, or if equipment is available, it allows greater freedom of motion for attendants.

Contrary to popular belief, expired air is not entirely carbon dioxide, but a combination of carbon dioxide and oxygen in sufficient proportions to compare favorably to the normal content of inhaled air. In addition, laboratory tests have proved that the volume of displaced air by this method is several times greater than by any other system of artificial respiration.

Laboratory tests and evaluations of the procedure, plus development of ancillary medical procedures used in connection with it, have been conducted under the auspices of the Research and Development Division of the Office of the Army Surgeon General. Dr. James O. Elam, Director of the Department of Anesthesiology of the Roswell Park Memorial Institute at the University of Buffalo School of Medicine in New York, has headed the research team during their several years' work.

Navy

Surgeon General—REAR ADM. BARTHOLOMEW W. HOGAN

Deputy Surgeon General—REAR ADM. BRUCE E. BRADLEY

SELECTED FOR REAR ADMIRAL

The following have been selected for promotion to the rank of Rear Admiral: Captain Allan S. Chrisman, MC, Commanding Officer, U. S. Naval Hospital, San Diego,

Calif.; Captain Frank P. Kreuz, MC, Commanding Officer, U. S. Naval Hospital, Bethesda, Maryland; Captain Calvin B. Gallo-way, MC, Commanding Officer, U. S. Naval Hospital, Bethesda, Maryland; and Captain Curtiss W. Schantz, DC, Commanding Officer, U. S. Naval Dental School, Bethesda, Maryland.

ASSIGNED TO BUMED

Commander Annette Baer, NC, has been assigned to the Personnel Branch Nursing Division, Bureau of Medicine and Surgery.

Commander Joseph J. Jacobs, MSC, has been assigned to the Personnel Branch, Dental Division, in the Bureau of Medicine and Surgery.

LCdr. Victor L. Pellarin, MSC, has been assigned as Head, Maintenance Section, Planning Division, in the Bureau of Medicine and Surgery.

RETIRED

Rear Admiral Joseph W. Kimbrough who retired from the Medical Corps of the Navy on July 1 after more than 32 years of active service has taken up residency in Albuquerque, New Mexico (P.O. Box 1447).

Admiral Kimbrough, a graduate of the University of Maryland School of Medicine (1925) was retired for physical disability.

RADM William W. Ayres, MC, a pathologist who has been on duty at the Armed Forces Institute of Pathology, Washington, D.C., retired on September 1. He has taken a position as pathologist at the Conemaugh Valley Memorial Hospital, Johnstown, Pa.

Doctor Ayres was the recipient of the 1957 Sir Henry Wellcome Medal and Prize. His essay "Ependymoma of the Cauda Equina," was published in the January 1958 issue of MILITARY MEDICINE.

Captain Victor G. Colvin, MC, and Captain Thomas M. Foley were placed on the retired list of Naval Officers on September 1, 1958.

LCdr. Donald R. Gooden, MSC, was placed on the Navy Officers Retired List on September 1 after completing more than 22

years active naval service. He has accepted a position with the Allegheny County Health Department and will make his home in Bradford Woods, Pa., near Pittsburgh.

Commander Hugh M. Taylor, MSC; LCdr. R. F. Dunn; LCdr. G. S. Lee; LCdr. James McDaniel and LCdr. Major L. Johnston, MSC, have been placed on the retired list.

SPECIAL WEAPONS MEDICAL SYMPOSIUM

Senior inactive Naval Reserve Medical Corps officers whose probable mobilization assignment would be to a fleet staff or major base in the theatre of operation may apply for a 4-day course in the medical aspects of atomic weapons effects symposium at Sandia Base, Albuquerque, New Mexico, March 16-20, 1959.

Quotas have been allocated to the Commandants of the Eighth, Ninth, Eleventh and Twelfth Naval Districts.

Air Force

Surgeon General—MAJ. GEN. DAN C. OGLE
Deputy Surg. Gen.—MAJ. GEN. OLIN F. McILNAY

DOCTOR-PATIENT RELATIONSHIP

Major General Dan C. Ogle, Surgeon General of the Air Force, has stated, "The age old problem of doctor-patient relationship needs constant attention and in our case 'the doctor' includes every person of the Medical Service who has anything to do with a patient, whether by phone, as receptionist, nurse, ward attendant, cook, or janitor. As for the physician, he must combine science with art and use neither to the exclusion of the other."

DIETETIC CONSULTANT

Miss Grace L. Stumpf, Director of Dietetics, Ohio State University and Assistant Professor at the University's School of Home Economics, has been appointed as Dietetic Consultant for the Air Force Medical Service.

As National Consultant, Miss Stumpf will serve as advisor to the Surgeon General on matters pertaining to the management and operation of the food services in the Air Force hospitals.

ASSIGNMENTS TO SGO

Colonel Jack C. Carmichael, USAF (MSC), has replaced Colonel John Luft, USAF (MSC), as Chief of the Facilities Division, Directorate of Plans and Hospitalization. Colonel Luft has been assigned to the Gunter Branch of the USAF School of Aviation Medicine at Gunter Air Force Base, Alabama.

Lt. Colonel Cardis Bryan, USAF (MSC), has been assigned as Sanitary Engineering Officer in the Preventive Medicine Division, Directorate of Professional Services. He replaced Lt. Colonel John F. Pierce, USAF (MSC), who has been assigned to Headquarters, United States Air Forces in Europe at Wiesbaden, Germany.

Lt. Colonel Emil J. Meyer, USAF (MSC), has replaced Colonel William W. Eledge, USAF (MSC), as Deputy Chief of the Materiel Division, Directorate of Plans and Hospitalization, and Lt. Colonel Wilbert H. Black, USAF (MSC), has replaced Lt. Colonel Meyer as Chief of the Equipping Authorization and Material Review Branch. Colonel Eledge has been assigned to Headquarters Sixteenth Air Force in Spain.

Lt. Colonel John M. Rogers, USAF (MSC), has been assigned as Deputy Chief of the Financial Programs Division, Directorate of Plans and Hospitalization. He replaced Colonel John R. Kelley, USAF (MSC), who has been assigned to the USAF Hospital at Carswell Air Force Base, Texas.

Major Raymond A. Flavion, USAF (MSC), has been assigned as Chief of the Requirements Section, Materiel Division, Directorate of Plans and Hospitalization. He replaced Captain Walter P. McHugh, USAF (MSC), who is now attending the Hospital Administration Course at Brooke Army Medical Center, Texas.

Major Kenneth P. Darling, USAF (MSC), has been assigned as Chief of Operations Section, Materiel Division, Directorate of Plans and Hospitalization.

Captain Ivan Grimes, USAF (MSC), has been assigned to the Consultants Division, Directorate of Professional Services, as Administrative Assistant.

HONORED

Major V. Harry Adrounie, USAF (MSC), Executive Officer of the Preventive Medicine Division in the Office of the Air Force Surgeon General, has been elected as second Vice-President of the National Association of Sanitarians.

Major Adrounie is a board certified sanitarian, a Fellow of the American Public Health Association, a member of the Association of Military Surgeons, and the Royal Society of Health.

HEADS AVIATION MEDICAL DIVISION

Colonel Hamilton B. Webb, USAF (MC), was recently appointed Chief of the Division of Aviation Medicine, Randolph Air Force Base.

He has proved to himself and the military service that proper motivation can overcome some physical defects. Back in the pre-World War II days when men were being turned down because they did not have all their natural teeth or their eyesight did not meet rigid standards Doctor Webb was rejected for military service.

A few years later the picture changed and the Yale and Columbia University graduate was accepted for military service. Thirteen years later he was certified as a specialist in Aviation Medicine and three more years has placed him in his present position. He wears the star-topped wings of a Senior Flight Surgeon now.

SELECTION OF SPACEMEN

The spaceman "should be 30 to 45 years old; he cannot be less than 30, because it will take him that long to get all the necessary training and education. He must be in top

physical condition, but not too muscular, for muscles are relatively useless in the weightless condition that is characteristic of space flight. Naturally, he will be trained in pressure breathing, and he should be acclimatized to about 14,000 feet, for optimal protection against lack of oxygen and bends."

Those are the words of Dr. Bruno Balke, age 51, who headed a team from the Department of Physiology and Biophysics at the School of Aviation Medicine, Randolph Air Force Base, Texas.

The team was taken to Mt. Evans, Colorado, and there they spent days climbing up and down the mountain. A mobile low-pressure chamber was used to acclimatize the men.

Dr. Balke, a German-born physiologist, has been climbing mountains since he was 15. For the past several years he has been studying human acclimatization to extreme altitudes.

RETIRED

Brig. General Earl Maxwell, USAF (MC), retired on September 1 after thirty years' active service, twenty-six as an Air Force Flight Surgeon.

As Air Surgeon for the Pacific Area in World War II, he supervised the activities of all air evacuation personnel. During the period there were approximately 250,000 patients evacuated. Later he became Chief Surgeon of the U. S. Army Service Command in Japan.

General Maxwell who is certified in ophthalmology and in aviation medicine will be affiliated with the Alcon Laboratories, Fort Worth, Texas.

NEW USAF HOSPITAL

Scott Air Force Base, Illinois, has a new permanent type hospital of 250 bed capacity with expansion facilities for 500 beds.

This will be a tuberculosis and thoracic surgical center for the U. S. Air Force Medical Service, although other services will be covered.

The Commanding Officer of the hospital is Colonel C. B. Stilson, USAF (MC).

Public Health Service

Surgeon General—LEROY E. BURNEY, M.D.
Deputy Surg. Gen.—JOHN D. PORTERFIELD, M.D.

INFLUENZA VACCINATION

A polyvalent type of influenza vaccine, including the Asian strain, is now available and is recommended by the Public Health Service as a measure to reduce the incidence of the disease this coming respiratory season.

Dr. Burney has stated that groups which should be considered for vaccination include hospital staffs, inmates of institutions, and industrial groups where disruption of service would be serious.

NEW DIVISION—NIH

A Division of General Medical Sciences has been established at the National Institutes of Health, Bethesda, Maryland. Head of the new division is Dr. G. Halsey Hunt.

This division will study the needs of research in the basic sciences and by taking this load off the Division of Research Grants more time will be allowed that division for the screening of applications for grants and fellowships.

COSTEP PROGRAM

The Commissioned Officer Student Training and Extern Program (COSTEP) is open to students in medicine and allied subjects who during the summer months desire training in hospitals and clinics. The students must have completed two years of professional training and be interested in the Public Health Service Commissioned Corps.

RETIRED

The following Commissioned Officers have been retired: Kathleen J. Murray, Junior Assistant Dietitian; Steven Sawchuk, Surgeon; and Helen Bean, Nurse Director.

Veterans Administration

Chief Medical Director—WILLIAM S. MIDLETON, M.D.

Deputy Chief Med. Dir.—R. A. WOLFORD, M.D.

ASSIGNMENTS

Dr. Irvin J. Cohen, who has been Director of Hospitals and Clinics, has been appointed as deputy to the Assistant Chief Medical Director for Professional Services. This is a newly created position.

Dr. Lee H. Schlesinger who has been manager of the West Side VA Hospital in Chicago has been named area medical director in the Columbus, Ohio, area medical office. He served with the U. S. Air Force during World War II.

Dr. Horace B. Cupp has been appointed as Deputy for Operations of Hospitals, Outpatient Clinics, and Homes, an office that has been vacant since the promotion of Dr. Linus A. Zink to Assistant Chief Medical Director for Operations.

Dr. John G. Hood has been assigned as Area Medical Director at Atlanta, Ga.

APPOINTMENTS

Dr. Turner Camp who has been the chief medical officer of the VA outpatient clinic in Los Angeles has been appointed to direct the operations of the Veterans Administration's outpatient clinics throughout the country.

A graduate of the Chicago Medical School, Dr. Camp served on active duty in the Navy from June 1945 to August 1946, entered the VA in 1947 and was recalled to active duty in the Navy as a submarine medical officer in July 1950. On release from the military service in October 1952 he returned to the Veterans Administration.

Dr. Arthur J. Klippen who has been in the VA Department of Medicine and Surgery in Washington since 1956 has been appointed director of hospitals in the department to fill that vacancy which has existed for some time.

After graduation from the St. Louis University School of Medicine in 1939, Dr. Klippen served an internship in the St. Louis City Hospital and in 1940 entered active service with the Army Medical Corps. He was separated with the rank of lieutenant colonel in 1946, at which time he joined the Veterans Administration.

DUST AND SOOT EFFECTS

Chronic pulmonary emphysema tends to develop in areas of soot deposit in the lungs according to a study made at the New Orleans VA hospital.

Dr. Charles P. Oderr, radiologist at the hospital, is in charge of the project studying the effects of dust and soot. A special technique known as microradiography where a beryllium window tube is used instead of a conventional x-ray tube has been devised for the study. By this means the percent of cases found to have emphysema has been increased from 13 to 45 (of the 125 cases studied). At present there has been no correlation between the amount of the soot present and the severity of the emphysema.

HIGHEST AWARD

Dr. John E. Fauber, head of the VA Dental Program, has been presented with the highest VA award, the exceptional service award by the Administrator of Veterans Affairs, Sumner G. Whittier.

Leadership in bringing the dental program to its present state of stability and administrative soundness was the basis of the award.

HONORED

Dr. Lee D. Cady, Manager, Veterans Administration Hospital, Houston, Texas, was awarded a Certificate of Honorary Membership for "Distinguished Service in the Field of Physical and Mental Rehabilitation" by the Association for Physical and Mental Rehabilitation at its annual convention in Atlantic City recently.

BURIAL EXPENSES

Under the recently enacted Public Law 85-674 the burial allowance for a veteran has been increased from \$150 to \$250.

NCS CASES

Non-service-connected cases seeking care in the Veterans hospitals amount to about 148,000 a year. The Veterans Administration estimates that by 1986 there will be 304,000 cases that will claim inability to pay for civilian care and apply for the VA medical service.

Miscellaneous

HEALTH LAW CENTER

The University of Pittsburgh has established a health law center within the Graduate School of Public Health. The Director is John F. Harty, Jr., an attorney from Johnstown, Pa.

"The purpose of this law center is to pursue, on a sustaining basis, studies concerning the legal aspects of medicine, dentistry, nursing, public health, hospitals and medical care," Dr. James A. Crabtree, dean of the Graduate School of Public Health, said. "To our knowledge, this is the only center of its kind in the nation. It offers an opportunity to establish a permanent, dynamic focal point for exploring various legal facets of health programs and administration."

SYMPOSIUM

The 2nd International Symposium on the Physics and Medicine of the Upper Atmosphere and Space to be held in San Antonio, Texas, November 10-12 is sponsored by the Air Force School of Aviation Medicine. Many problems will be proposed for answer, such as, rescue in space, repair of the space vehicle. The problems and the answers will tax the imagination of those who attend.

ADVANCES IN MEDICINE—ARTHRITIS

The Second Oklahoma Colloquy on Advances in Medicine will be held at the Uni-

versity of Oklahoma Medical Center, November 12-15, and will be devoted to Arthritis and Related Disorders. Registration (\$25) will be open to all physicians; members of the Armed Forces, interns and residents may attend without charge.

For further information write to the Office of Postgraduate Education, University of Oklahoma School of Medicine, 801 Northeast 13th St., Oklahoma City, Okla.

ELECTRICAL TECHNIQUES IN MEDICINE

The Eleventh Annual Conference on Electrical Techniques in Medicine and Biology will be held in Minneapolis, Minn., November 19-21 at the Nicollet Hotel.

Further information may be obtained from Otto H. Schmitt, Conference Chairman, University of Minnesota, Minneapolis 14, Minn.

BAHAMAS' CONFERENCES

Outstanding speakers have been chosen for the three conferences in Nassau, Bahamas: The Sixth Bahamas Medical Conference (November 28-December 18); The First Bahamas Surgical Conference (December 29-January 17); and The Serendipity Session (January 18-January 31).

For further information write to: Dr. B. L. Frank, 23 East 79th St., New York 21, N.Y.

FELLOWSHIPS IN RESPIRATORY DISEASES

Respiratory Diseases and Tuberculosis fellowships are available to assist in the training of investigators and teachers of medicine through the American Trudeau Society. Applications must be received by December 1.

For further information write to: The Director of Medical Education, American Trudeau Society, c/o The Henry Phipps Institute, 7th and Lombard Sts., Philadelphia 47, Pa.

INDUSTRIAL MEDICINE FELLOWSHIPS

Application for the U. S. Atomic Energy Commission Special Fellowships in Industrial Medicine (1959-1960) should be filed before January 1, 1959.

Fellowships are open to men and women physicians who are citizens of the United States and who graduated two years before beginning tenure of the fellowship. Individuals must have license to practice medicine in one of the States or Territories of the U. S.

Further information may be obtained from the Secretary, Dr. Henry A. Blair, School of Medicine and Dentistry, Rochester 20, New York.

GIFT GIVING

What kind of a gift would be most appreciated is often a time consuming problem for the giver. A unique method whereby the recipient can select his own gift from a long list has been devised. If interested send your inquiry to the Association Headquarters: 1726 Eye Street, Washington 6, D.C.

PRESUMPTION-OF-GUILT

Alcohol in the blood as a presumption-of-guilt has been lowered from .08 to .05 in Norway and Sweden. In the United States it is .15.

Honor Roll

Since the publication of our last list, the following sponsored one or more applicants for membership in the Association:

Phar. Dir. George F. Archambault,
USPHS

Lt. Col. Arnold B. Becker, DC, USA

Major William R. Bunge, MC, USA

Col. Raymond E. Duke, MC, USA

Capt. Thomas F. Ednie, USAF

A. B. C. Knudson, M. D.

LCdr. Elizabeth Feeney, NC, USN

Lt. Col. Jule E. Lane, ANC, USAR

Rear Adm. I. L. V. Norman (MC) USN

Major Edward A. Barrett, MC, USAR

Dr. Vladamir Markovich

Robert W. Logan, M. D.

Col. Harry S. Shelly, MC, Tenn. NG

Rear Adm. C. G. Clegg, MC, USN

Sidney S. Heilweil, M. D.

Capt. M. W. Rusher, (MC) USN

Col. Herbert Wendelken, MC, NY NG
 R. L. Zucherman, M. D.
 Col. Edward R. Wernitznig, MC, USA
 Med. Dir. E. R. Marshall, USPHS Ret.
 Col. Joseph U. Weaver, MC, USA
 Lt. Cdr. Frances Spear, MSC, USN
 Col. Robert E. Bitner, USA, Ret.
 George G. Trattner, D.D.S.

J. J. Hoffman, M. D.
 Lt. Col. Webb Haymaker, MC, AUS Ret.
 Lt. Col. Crandall I. Koons, DC, USA
 Lt. Harriet S. Lee, AMSC, USA
 Maj. Gen. James P. Cooney, MC, USA
 Col. L. P. Zagelow, USAF (MSC)
 Lt. Col. John J. Dorsey, MC, NY NG
 Dr. Irving Mauer

PROPOSED CHANGE IN CONSTITUTION

The Executive Council of the Association of Military Surgeons of the United States proposes the following change to Article IV, Section 2, Paragraph 2 of the Constitution of the Association pertaining to the election and holding of office:

PRESENT READING: "These officers shall hold office until their successors are elected and accept office."

PROPOSED READING: "The officers shall be elected yearly at the Annual Convention of the Association and their term of office shall be during the calendar year immediately succeeding that in which their election takes

place. In any case in which successors are not elected to office the incumbents shall hold office until their successors are elected and accept office."

DISCUSSION: Since the affairs of the office of president of the Association cannot be cleared up for sometime after the annual meeting it is advisable to continue the tenure of office for the remainder of the calendar year in which the meeting is held. The necessity for changing dates of the convention from year to year also makes the term of officers irregular; the calendar year term would make the term office more certain to all members.



The Association of Military Surgeons of the United States

Founded 1891 Incorporated by Act of Congress 1903
Suite 718, New Medical Bldg., 1726 Eye Street, N.W., Washington 6, D.C.
Telephone National 8-2206
Official Journal: MILITARY MEDICINE

OFFICERS—1958

President:

COL. CHARLES R. MUELLER
U. S. Army, Ret. (VA)

First Vice-President:

BRIG. GEN. H. H. TWITCHELL
U. S. Air Force (MC)

Second Vice-President:

REAR ADM. RICHARD A. KERN
U.S.N.R., Ret.

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LEROY E. BURNEY
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Fourth Vice-President:

MAJ. GEN. JAMES P. COONEY
MC, U. S. Army

Fifth Vice-President:

REAR ADM. IRWIN L. NORMAN
MC, U. S. Navy

Sixth Vice-President:

COL. ROBERT C. KIMBERLY
MC, Md. NG

Secretary:

COL. ROBT. E. BITNER
U. S. Army, Ret.

Editor:

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U. S. Army, Ret.

Dental Section Chairman:

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U. S. Army, Ret.

Veterinary Section Chairman:

BRIG. GEN. J. A. MCCALLAM
U. S. Army, Ret.

M. S. C. Section Chairman:

COL. BERNARD AABEL
MSC, U. S. Army

Nurse Corps Section Chairman:

MISS RUTH L. JOHNSON
Nurse Div., USPHS

Medical Specialist Corps Section Chairman:

CAPT. BARBARA M. HODGKINS
USAF (M.Sp.C.)

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JOHN N. BOWDEN
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AUS, Ret.

EXECUTIVE COUNCIL

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JAMES P. LEAKE, Med. Dir. USPHS, Ret., Secretary

LIVING PAST PRESIDENTS

(Rank held at time of office)

ASST. SURG. GEN. JOHN W. KERR, USPHS (1921)
COL. FREDERICK H. VINUP, MC, Md., NG (1928)
ASST. SURG. GEN. RALPH C. WILLIAMS, USPHS (1933)
SURG. GEN. THOMAS PARRAN, USPHS (1939)
MAJ. GEN. CHARLES R. REYNOLDS, MC, USA (1940)
COL. JAMES A. MATTISON, Vet. Adm. (1942)
COL. LUCIUS A. SALISBURY, MC, N.Y., NG (1944)
ASST. SURG. GEN. WARREN F. DRAPER, USPHS (1947)
VICE ADM. JOEL T. BOONE, MC, USN (1949)

COL. WILLIAM H. TRIPLETT, MC, Md., NG (1950)
COL. ROBERT C. COOK, MC, AUS, Vet. Adm. (1951)
MAJ. GEN. HARRY G. ARMSTRONG, USAF (MC) (1952)
REAR ADM. WINCHELL MCK. CRAIG, MC, USNR (1953)
SURG. GEN. LEONARD A. SCHEELE, USPHS (1954)*
REAR ADM. W. DANA, MC, USN (1956)*
BRIG. GEN. AMOS R. KOONTZ, MC, Md. NG (1957)*

* Member Sinking Fund Committee

PROGRAM

65TH ANNUAL CONVENTION ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES

THEME—"DYNAMIC MEDICINE AND REHABILITATION IN THE SPACE AGE"

PRESIDENT

COLONEL CHARLES R. MUELLER, USA, RET.
(On duty with Veterans Administration)

GENERAL CHAIRMAN

A. B. C. KNUDSON, M. D.
Director, Physical Medicine and Rehabilitation Service, Veterans Administration.

SCIENTIFIC PROGRAM COMMITTEE CHAIRMAN

W. EDWARD CHAMBERLAIN, M. D.
Special Assistant to the Chief Medical Director for Atomic Medicine, Veterans Administration.

ASSISTANTS TO GENERAL CHAIRMAN

F. J. SCHAFFER, M. D.
Veterans Administration

MAJOR RALPH O. ANDERSON, MSC, USA
Office, Surgeon General, Army

SPECIAL COMMITTEES (CHAIRMEN)

Scientific Exhibits

CAPTAIN WILLIAM M. SILLIPHANT, MC,
U. S. Navy

Commercial Exhibits

MR. STEVEN K. HERLITZ

Registration and Reception

MISS R. ADDAMS, R.N.

Dinners and Luncheons

MRS. HELEN R. CAHILL

International Liaison

COLONEL GEORGE B. GREEN, USAF (MC)

Reserve Officers Affairs

COLONEL JAMES H. KIDDER, MC, AUS

Ceremonies and Entertainment

COLONEL PAUL GOODWIN, USAF (MC)

Publicity

LT. COLONEL RAYMOND L. TOWNE, USAF

Ladies' Entertainment

MRS. FLOYD L. WERGELAND

Professional Activities

MED. DIR. BYRON J. OLSON, USPHS

Transportation

CAPTAIN CLARENCE J. COLES, TC, USA

Sustaining Membership

L. EUGENE DAILY, M. D.

Resolutions

BRIG. GEN. FRANK E. WILSON, MC, USAR

Nominating

BRIG. GEN. L. C. FAIRBANK, USA, Ret.

HIGHLIGHTS OF CONVENTION

Opening Ceremony	November 17
International Delegates Ceremony	November 18
International Luncheon	November 18
Ladies Luncheon and Fashion Show	November 18
Honors Night Dinner and Dance	November 19

MONDAY, NOVEMBER 17

9:00 A.M.—*Opening Ceremony*

"Dynamic Medicine and Rehabilitation
in the Space Age."

Presidential Address, COLONEL CHARLES R.
MUELLER, U. S. Army, Retired.

Guest Speaker—GENERAL ALFRED M.
GRUENTHER, U. S. Army, Retired,
President, American National
Red Cross

Panel Meeting of Service Chiefs

The Surgeon Generals, Army, Navy, Air
Force, Public Health Service, and Medical
Director, Veterans Administration.

Moderator: Major General George F. Lull,
U. S. Army, Retired. Assistant to the
President, American Medical Association.

2:30 P.M.—*"Problems of Space"*

Presiding: BRIGADIER GENERAL DON FLICK-
INGER, USAF (MC), Surgeon and Direc-
tor of Life Sciences, Air Research and
Development Command, Andrews Air
Force Base.

DR. WERNHER VON BRAUN, Ballistic Mis-
sile Agency, Redstone Arsenal, Alabama.

CAPTAIN NORMAN LEE BARR, MC, U. S.
Navy, Director, Astronautical Division,
Bureau of Medicine and Surgery Dep't.
Navy, Washington, D.C.

LT. COLONEL DAVID G. SIMONS, USAF
(MC), Chief, Space Biology Branch,
Aero Medical Field Laboratory, Air Force
Missile Development Center, Holloman
Air Force Base, New Mexico.

CAPTAIN CHARLES F. GELL, MC, U. S.
Navy, Special Assistant for Medicine and
Allied Sciences, Office of Naval Research,
Washington, D.C.

TUESDAY, NOVEMBER 18

9 A.M.—*"The Changing Medicine Program"*

COLONEL FLOYD L. WERGELAND, MC,
U. S. Army, Director, Office for
Dependents' Medical Care.

"Nicholas Senn, Surgeon and Soldier: A
Happy Combination in Military Medicine"
Brigadier General Amos R. Koontz, Md.
NG (MC) Ret. Past-President, Associa-
tion of Military Surgeons of the United
States.

"Medical Miscellany"

Albert H. Holland, Jr., M.D., Medical
Director, Food and Drug Administration,
Department of Health, Education and
Welfare. Guest Speaker for the Sustaining
Members.

11:00 A.M. *Convocation in Honor of Repre-
sentatives of Other Countries*

12:30 P.M.—*International Luncheon.*

2:30 P.M. *Panel Meeting—"Occupational
Health Problems in Space Flight"*

Presiding: MAJOR GENERAL WILFORD F. HALL, USAF (MC), Surgeon, Air Material Command, Wright-Patterson Air Force Base, Ohio

"Important Health Problems"

—Experienced at Redstone Arsenal

Colonel John R. Hall, Jr., MC, U. S. Army Preventive Medicine Division, Office of Surgeon General, Army.

—Experienced with Nuclear Power Plants and Noise

Captain Ross B. Lautzenheiser MC, U. S. Navy, Flight Surgeon, U. S. Navy School of Aviation Medicine, Pensacola, Florida.

—Experienced at Cape Canaveral and with Bioeffects of Physical Energy

Colonel Jack Bollerud, USAF (MC), Headquarters, Air Research and Development Command, Andrews Air Force Base, Washington, D.C.

—At the Aero Medical Laboratory Wright Air Development Center in the Man-in-Space Studies

Colonel John P. Stapp, USAF (MC), Head, Aero Medical Laboratory, Air Research and Development Command, Wright-Patterson Air Force Base, Ohio.

"The Importance of Good Occupational Health Programs in the Military Services"

Robert A. Kehoe, M.D., Professor of Industrial Medicine and Director, Department of Preventive Medicine and Industrial Health, University of Cincinnati College of Medicine.

8:15 P.M.—*Lecture on Mental Health*

JACK R. EWALT, M.D., Commissioner, Department of Mental Health, The Commonwealth of Massachusetts, Boston.

WEDNESDAY, NOVEMBER 19
9:00 A.M.

Symposium on Rehabilitation

Presiding: CHARLES D. SHIELDS, M.D., Director, Department of Physical Medi-

cine and Rehabilitation, Georgetown University Medical Center, Washington, D.C.

"Planning, Facilities, Methods, Organization, Personnel, and Training"

Colonel A. F. Mastellone, MC, USA, Head, Department of Physical Medicine and Rehabilitation, Walter Reed Army Medical Center, Washington, D.C.

"Rehabilitation and Cancer"

Murray M. Copeland, M.D., Professor of Oncology, Georgetown University Medical Center, Washington, D.C.

"Amputees"

Frederik Vultee, Director, Department of Physical Medicine and Rehabilitation, Medical College of Virginia, Richmond, Va.

"Mental Disease"

Oreon K. Timm, M.D., Area Medical Director, Veterans Administration, St. Paul, Minn.

"Thoracic Surgery"

Harry Walkup, M.D., Chief, Surgical Service, Veterans Administration Hospital, Oteen, N.C.

"Cardiac Surgery"

Charles A. Hufnagel, M.D. Chief, Cardiac Surgery Service, Georgetown University Medical Center, Washington, D.C.

"Plastic Prostheses"

Captain Victor J. Niiranen, DC, USN, Head, Training Aids Department, Naval Dental School, National Naval Medical Center, Bethesda, Md.

"Physical Standards—Evaluation of Fitness for Duty"

Colonel Clark Meador, MC, USA, Head, Department of Physical Standards Research, Army Institute of Research, Walter Reed Army Medical Center, Washington, D.C.

1:30 P.M.

Annual Business Meeting of the Association. All members are urged to attend.

2:30 P.M. *"The Science Writer and the Doctor"*

MR. FRANK CAREY, Science Writer for the Associated Press

3:00 P.M. *Panel Meeting*

"Hospital Administration, Its Importance to Patient Care"

Moderator—Brigadier General Carl W. Tempel, MC, USA, Chief, Professional Division, Office of the Surgeon General, U. S. Army.

"Design and Planning of Military Hospitals"
Colonel Ralph R. Cleland, MSC, USA Chief, Medical Facilities Branch, Plans and Operations Division, Office of the Surgeon General, U. S. Army.

"Nursing Service"

Colonel Frances I. Lay, USAF (NC) Chief, Air Force Nurse Corps, Office of the Surgeon General, U. S. Air Force

"Supply"

Lieutenant Commander Lester K. Thompson, MSC, USN Executive Assistant to the Assistant Chief of Bureau for Planning and Logistics, Bureau Medicine and Surgery, U. S. Navy.

"Controllerships"

Robert L. Capehart, Pharmacist Director, Officer in Charge, Public Health Service, Medical Supply Depot, Perry Point, Maryland.

"Other Administrative Services"

Linus A. Zink, M.D. Assistant Chief Medical Director for Operations, Veterans Administration.

Wednesday Evening

HONORS NIGHT—Cocktails, Dinner, and Dancing

MEDICAL MOTION PICTURES WILL BE SHOWN THROUGHOUT THE CONVENTION

SECTION MEETINGS

Veterinary Section

MONDAY, OCTOBER 28

2:00 P.M.

"The Veterinarians Part in Air Force Space Research"

Lt. Colonel A. Taylor, USAF(VC), Air Research and Development Command, Andrews Air Force Base, Washington, D.C.

"Progress in Food and Drug Sterilization by Ionizing Radiation"

Dr. W. Dexter Bellamy, Research Associate, Biological Studies, General Electric Company, Research Laboratories, Schenectady, New York.

"Some Observations of Veterinary Medicine in the Soviet Union"

Dr. C. D. Van Houweling, Assistant Administrator, Agricultural Research Station, U. S. Department of Agriculture.

Pharmacy Panel

MONDAY, NOVEMBER 17

Address by BRIGADIER GENERAL HAROLD C. LUETH, MC, USAR, Medical Consultant to The Surgeon General of the Army

Nurse Corps Section

TUESDAY, NOVEMBER 18

2:30 P.M.

THEME—"REHABILITATION NURSING:
IS IT NEW OR IS IT OLD?"

Presiding: MISS RUTH L. JOHNSON, Chief, Nursing Department, The Clinical Center, National Institutes of Health, Bethesda, Maryland.

"Overview of Rehabilitation Nursing"

Miss Rosalie Peterson, Chief, Nursing Section, Field Investigation and Demonstration Branch, National Cancer Institute,

National Institutes of Health, Bethesda, Md.

"Rehabilitation Nursing in a Specialty Hospital"

Miss Elizabeth Ulrich, Assistant Chief, Nursing Education, Veterans Administration Hospital, Washington, D.C.

"Rehabilitation Nursing in a General Hospital"

Major Jean Tracy, ANC, Walter Reed Army Hospital, Walter Reed Army Medical Center, Washington, D.C.

Discussants:

"Overview of Rehabilitation Nursing"

Lt. Colonel Myrtle Nereson, USAF(NC), Directorate of Staffing and Education (Nurse and Medical Specialist Branch), Office of the Surgeon General, Air Force, Washington, D.C.

"Rehabilitation Nursing in a Specialty Hospital"

Captain Phyllis Verhonick, ANC, Department of Nursing, Walter Reed Army Institute of Research, Walter Reed Army Medical Center, Washington, D.C.

"Rehabilitation Nursing in a General Hospital"

Lieutenant Sarah C. McGinniss, NC, USNR, Department of Nuclear Medicine, Naval Medical School, National Naval Medical Center, Bethesda, Md.

Dental Section

WEDNESDAY, NOVEMBER 19

9:00 A.M.

Presiding: BRIG. GEN. LEIGH C. FAIRBANK, U. S. Army, Ret., Former Chief, Dental Corps, U. S. Army

Opening Remarks:

John E. Fauber, D.D.S., Assistant Chief Medical Director for Dentistry Department of Medicine and Surgery, Veterans Administration, Washington, D.C.

"Current Research in General Anesthesia in Dentistry"

E. J. Driscoll, D.D.S., Dental Director,

Public Health Service, Chief, Oral Surgery, National Institute of Health Clinical Center, Bethesda, Maryland

"The Management of Emergencies in Dental Practice"

Thomas A. McFall, DC, Director, Dental Division, Walter Reed Army Institute of Research, Walter Reed Army Medical Center, Washington, D.C.

"Dentistry and the Problems of a Space Age"

William Stanmeyer, Capt. DC, USN, Head, Dental Research, U. S. Navy Medical Research Laboratory, Submarine Base, New London, Connecticut.

"Evaluation of Newer Devices for the Removal of Tooth Structure"

Major Jack L. Hartley, DC, USAF, School of Aviation Medicine, Department of Experimental Dentistry, Randolph Air Force Base, Texas

Sustaining Membership Section

WEDNESDAY, NOVEMBER 19

9:00 A.M.

Presiding: L. E. DAILY, M.D., Chairman, Sustaining Membership Section, Vice-President, Eaton Laboratory Division, The Norwich Pharmacal Co.

Presentation of the President and President-Elect of the Association of Military Surgeons of the United States.

"Current Progress Report of Military Medical Supply Agency"

Rear Admiral W. L. Knickerbocker, SC, U. S. Navy, Executive Director for Medical Material, Military Medical Supply Agency, Brooklyn, New York

"Economics of Present Research Programs"

Dr. Van Slyke, Chairman, National Institutes of Health, Brig. General D. Flickinger, USAF (MC), Colonel R. Hullinghorst, MC, USA, Captain O. D. Yarborough, MC, USN

Medical Specialist Corps Section

WEDNESDAY, NOVEMBER 19

3:00 P.M.

Presiding: CAPTAIN BARBARA HODGKINS, USAF(MSpC), Dietitian, Office of the Surgeon General, Air Force, Washington, D.C., Section Chairman, Association of Military Surgeons of the United States.

"Nutrition Research for Man in Space"

Miss Beatrice Finkelstein, Physiology Branch, Nutrition Section, Aero Medical Laboratory, Wright Patterson Air Force Base, Ohio.

"Human Responses to Some Simulated Space Flight Environment"

Captain Neville Clark, USAF(MC), Biophysics Branch, Aero Medical Laboratory, Wright Patterson Air Force Base, Ohio.

SCIENTIFIC EXHIBITS

ARMED FORCES INSTITUTE OF PATHOLOGY

Exhibit: "Medicolegal Autopsy—Gunshot Wounds"

Exhibitor: Russell S. Fisher, M.D., Paul F. Guerin, M.D., Capt. W. M. Silliphant, MC, USN, and Maj. E. H. Johnston, MC, USA

Exhibit: "Pathologic Investigation of Aircraft Accident Fatalities"

Exhibitor: Capt. W. M. Silliphant, MC, USN, Col. Frank M. Townsend, USAF (MC), Col. Joe M. Blumberg, MC, USA, Maj. Verni A. Stenbridge, USAF (MC), and Maj. Frederick W. Lovell, USAF (MC)

ARMY

Exhibit: "Respiratory Resuscitation"

Exhibitor: Peter Safar, M.D., Francis Chang, M.D., James O. Elam, M.D., and David G. Greene, M.D.

Exhibit: "Nuclear Weapon Effect on a Biological Specimen"

Exhibitor: Lt. Col. Gerald M. McDonnell, MC, USA, and Lt. Col. William H. Moncrief, MC, USA

NAVY

Exhibit: "The Navy Medical Nuclear Reactor"

Exhibitor: Capt. E. R. King, MC, USN, Capt. S. F. Williams, MC, USN, Commander Thomas Shea, MSC, USN, and Lt. T. G. Mitchell, MSC, USN

Exhibit: "Physiological Measurements from Earth-Orbiting Satellites"

Exhibitor: Capt. Norman L. Barr, MC, USN

AIR FORCE

Exhibit: "Ventilatory Testing"

Exhibitor: Lt. Col. Robert B. Stonehill, USAF (MC)

Exhibit: "Progressive Splinting—Traumatic Hand Injuries"

Exhibitor: Capt. Wilma Lindberg, USAF (MSC)

Exhibit: "Spaceman Executive Physical"

Exhibitor: Col. James H. Hammond, USAF (MC)

PUBLIC HEALTH SERVICE

Exhibit: "Some Autonomic Concomitants of Epileptic Automatisms"

Exhibitor: John M. Van Buren, M.D.

Exhibit: "Studies of Cancer Cells in Circulatory Blood"

Exhibitor: National Cancer Institute, NIH

VETERANS ADMINISTRATION

Exhibit: "Rehabilitation of the Quadriplegic Patient"

Exhibitor: Frank J. Schaffer, M.D. and A. B. C. Knudson, M.D.

Exhibit: "Conditions and Deformities of Rheumatoid Arthritis"

Exhibitor: William J. LaJoie, M.D.

TECHNICAL EXHIBITORS

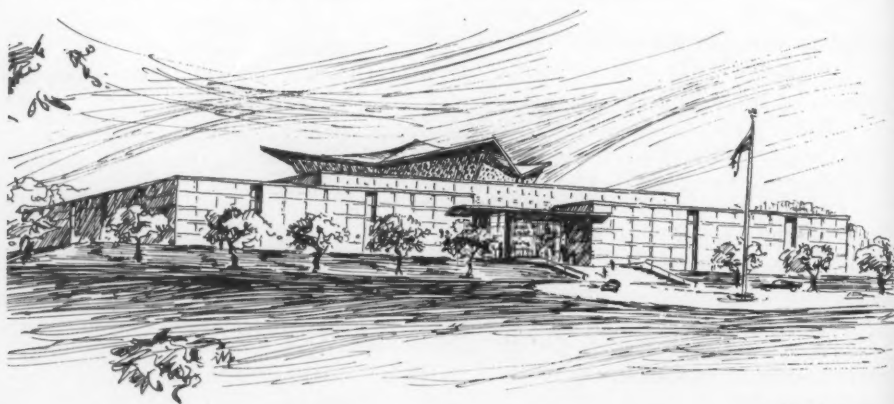
- | | |
|---|---|
| Abbott Laboratories
(Booth 45) | Florida Brace Corporation
(Booth 33) |
| Air-Shields, Inc.
(Booth 31) | E. Fougere & Company, Inc.
(Booth 50) |
| Alderson Research Laboratories, Inc.
(Booth 7) | Geigy Pharmaceuticals
Div. of Geigy Chemical Corp.
(Booth 12) |
| American Cyanamid Company
Surgical Products Division
(Booth 20) | Holland-Rantos Company, Inc.
(Booth 62) |
| American Sterilizer Co.
(Booth 8) | Franklin C. Hollister Company
(Booth 61) |
| Ames Company, Inc.
(Booth 15) | Industrial Acoustics Co., Inc.
(Booth 37) |
| Astra Pharmaceutical Products, Inc.
(Booth 39) | Lederle Laboratories
Div. of American Cyanamid Co.
(Booth 24) |
| Austenal, Inc.
(Booth 46) | J. B. Lippincott Company
(Booth 41) |
| Ayerst Laboratories
(Booth 18) | Lloyd Brothers, Inc.
(Booth 57) |
| Baxter Laboratories, Inc.
(Booth 11) | Lydia O'Leary, Inc.
(Booth 53) |
| Becton, Dickinson and Co.
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| Burroughs Wellcome & Co. (USA) Inc.
(Booth 5) | Maico Electronics, Inc.
(Booth 28) |
| Cambridge Instrument Co., Inc.
(Booth 34) | Mead Johnson & Company
(Booth 43) |
| Chesebrough-Pond's Inc.
(Booth 30) | Medical, Dental, Scientific Photo Equipment
(Booth 35) |
| Chilean Iodine Educational Bureau, Inc.
(Booth 32) | Merck Sharp & Dohme
Div. of Merck & Co., Inc.
(Booth 19) |
| Ciba Pharmaceutical Products, Inc.
(Booth 14) | The Wm. S. Merrell Company
(Booth 47) |
| The Coca-Cola Company
(Special Area) | Parke, Davis & Company
(Booth 6) |
| Cutter Laboratories
(Booth 2) | Pfizer Laboratories
(Booth 51) |
| Desitin Chemical Company
(Booth 16) | Picker X-Ray Corporation
(Booth 13) |
| Doho Chemical Corporation
(Booth 23) | The Purdue Frederick Co.
(Booth 44) |
| Eaton Laboratories
(Booth 38) | Reed & Carnrick
(Booth 36) |
| Encyclopaedia Britannica
(Booth 56) | R. J. Reynolds Tobacco Company
(Booth 55) |
| Fenwal Laboratories
(Booth 48) | |

J. B. Roerig & Company
(Booth 49)
William H. Rorer, Inc.
(Booth 42)
Sandoz Pharmaceuticals
(Booth 17)
Schering Corporation
(Booth 40)
Joseph E. Seagram & Sons, Inc.
(Booth 10)
G. D. Searle & Co.
(Booth 59)
Shampaine Company
(Booth 4)
Smith Kline & French Laboratories
(Booth 1)

E. R. Squibb & Sons
(Booth 21)
Stephenson Corporation
(Booth 54)
Tailby-Nason Company, Inc.
(Booth 29)
The Upjohn Company
(Booth 52)
Wallace Laboratories
(Booth 9)
Warner-Chilcott Laboratories
(Booths 22 & 60)
Westwood Pharmaceutical Division
Foster-Milburn Co.
(Booth 25)
Wyeth Laboratories
(Booth 27)



NATIONAL LIBRARY OF MEDICINE

*Architect's Drawing*

Public Law 85-580 signed by President Eisenhower on August 1, appropriates \$6,950,000 for the National Library of Medicine. Construction on the building should begin in the spring of 1959. The building will be located at the National Institutes of Health, Bethesda, Maryland.

O B I T U A R I E S

Rear Adm C. H. Mack, DC, U.S.N., Ret.

Cornelius H. Mack, Rear Admiral, Dental Corps, U. S. Navy, Retired, died at Largo, Florida, August 22, at the age of 73.

Admiral Mack, a native of Springfield, Mass., graduated from Harvard University with the degree of Doctor of Dentistry in 1906. He was appointed Lieutenant Junior Grade in 1914 in the then recently established Navy Dental Corps. During World War I he served as Regimental Dental Surgeon, 6th Marine Regiment, and Division Dental Surgeon, 2nd Marine Division, AEF, in France and Germany.

In 1943 he was retired with the rank of Rear Admiral and was retained on active duty as District Dental Officer, Twelfth Naval District until his release from active duty in 1945. He was the first dental officer to receive a permanent commission as Rear Admiral in the Navy Dental Corps.

He is survived by his wife and a son.
Interment was in Arlington National Cemetery.

Col. James F. Hall, U. S. Army, Ret.

James F. Hall, Colonel, Medical Corps, U. S. Army, Retired, died September 2 in Walter Reed Army Hospital at the age of 84.

Colonel Hall, a native of Lowell, Mass., received his medical degree from Harvard University in 1899 and was commissioned in the Army Medical Corps in 1901. During World War I he served with the American Expeditionary Force in France. He was retired from the Army in 1933 and established his home in Washington, D.C.

He is survived by his wife who lives at 3133 Connecticut Ave., N.W., Washington 8, D.C.

Interment was in Arlington National Cemetery.

NEW BOOKS

Books may be ordered through the Association

- Electrocardiogram Clinics*, by Joseph E. F. Risenman, M.D., and Elliott L. Sagall, M.D., The Macmillan Co., New York, N.Y. Price \$10.50.
- Pye's Surgical Handicraft*, by Hamilton Bailey, F.R.C.S., F.A.C.S., R.R.S., The Williams and Wilkins Co., Baltimore, Md. Price \$10.00.
- American Hospital Formulary*, by American Society of Hospital Pharmacists, Hamilton Press, Hamilton, Ill. Price \$15.00.
- Human Blood in New York City*, A Study of its Procurement, Distribution and Utilization, Conducted by the Committee on Public Health, The New York Academy of Medicine, New York, N.Y.
- Etiology and Treatment of Leukemia*, Proceedings of the First Louisiana Cancer Conference. Edited by Walter J. Burdette, Ph.D., M.D., F.A.C.S., C. V. Mosby Co., St. Louis, Mo. Price \$4.00.
- Bilharziasis*. World Health Organization Bul. Vol. 18, No. 5-6, Columbia University Press, New York, N.Y. Price \$4.00.
- Buildings For Research*, by editors of Architectural Record F. W. Dodge Corp., New York, N.Y. Price \$9.50.
- Doctor Squibb*, by Lawrence G. Blochmon. Simon and Schuster, Inc., New York, N.Y. Price \$5.00.
- Diseases of the Esophagus*, by J. Terracol and Richard H. Sweet, W. B. Saunders Co., Philadelphia, Pa. Price \$20.00.
- Le Pneumothorax Spontane Non Tuberculeux, De L'Adulte et Son Traitement*, by Andre Meyer. Masson Et C., Editeurs, 120, boulevard Saint-Germain, Paris 6, France. Price 1.950 fr.
- Reeducation Psycho-Motrice, Exercices en Suspension Et Poulie-Therapie*, Ch. Rocher, Masson Et C., Editeurs, 120, boulevard Saint-Germain, Paris 6, France. Price 1.250 fr.
- Bases Physiologiques et Aspects Cliniques de L'Epilepsie*, Pr. Th. Alajouanine Masson Et C., Editeurs, 120, boulevard Saint-Germain, Paris 6, France. Price 2.300 fr.
- International Standard for Drinking-Water*. World Health Organization. Columbia University Press, New York, N.Y., Price \$4.00.
- Presentation of Technical Information*, by Reginald C. Kapp. The Macmillan Company, New York, N.Y. Price \$2.95.



MAIL EARLY

Christmas packages for overseas stations must be mailed by November 15 to assure delivery by the holidays.

BOOK REVIEWS

GENERAL DIAGNOSIS AND THERAPY OF SKIN DISEASES. An introduction to Dermatology for students and physicians. By Hermann Werner Siemens, M.D., Professor of Skin and Venereal Diseases at the University of Leiden, Holland. Translated by Kurt Wiener, M.D., Dermatologist, Milwaukee, Wis. 324 pages, 375 illustrations. The University of Chicago Press. 1958. Price \$10.00.

This book will serve to remind American dermatologists that a painstaking study of the fundamental lesion is of the utmost importance in arriving at a correct diagnosis. This does not mean that the aspect of teaching has been neglected in our text-books and medical schools. However, never before, to my knowledge, has the entire subject of visual diagnosis been analyzed with such care, or with such meticulous attention to detail.

In the chapters on symptomatology the author expounds in somewhat arbitrary form his opinion that too much significance is being given to psychosomatic factors in the pathogenesis of skin diseases. Thus he insists that "the patients do not get itching disorders because they are nervous (in which case the sanatoria would be full of itching patients), but rather it is more likely that they become nervous because the itching deprives them of rest and regular sleep."

Even when all organic and metabolic factors have been investigated and eliminated there still remain cases of protracted pruritus and scratching which represent a neurotic (not psychotic) reaction to intolerable life situations. Although the author admits that hospitalization frequently brings relief to the itching patient he is at a loss to explain the almost inevitable relapse at home. This environmental test is in itself a strong indication that emotional factors, and not "home allergens," may be responsible for the recurrence.

Another controversial section is the one devoted to a discussion of the interrelation between skin disorders and internal disease. In view of the fact that Dr. Siemens would, in general, deny the importance of "constitutional pathology" it seems somewhat paradoxical to note that Dr. Wiener, to whom we owe the excellent translation of the present volume, is himself the author of an important monograph devoted to "Skin Manifestations of Internal Disorders." One should not speak *ex cathedra* on important issues which are still far from being completely resolved.

As might be anticipated from the foregoing, reli-

ance is placed almost exclusively on therapy of a topical nature. There is excellent and detailed instruction for the application of numerous combinations of drugs in ointments and other vehicles. In order to assess the value of various preparations the author makes use of the one-side method in which only one side of the body is treated; and the right-left or simultaneous method in which slightly different applications are used on opposite sides in order to determine relative effectiveness. This latter procedure has long been carried out at the Skin and Cancer Unit in New York. As far as internal medications are concerned Dr. Siemens is almost a therapeutic nihilist. He is skeptical about arsenic, dietotherapy, vitamins, and hormones. However, he does have a good word for ACTH in the treatment of pemphigus and acute lupus erythematosus.

Enough has been said to indicate that this is a provocative book which is certain to stimulate considerable discussion. It contains numerous forthright statements, the results of long experience and reflection, which are most welcome even though we cannot accept them all as gospel. One illuminating statement goes as follows: "Patients who do not really care about the cure of their ailment . . . should not be accepted because they cannot be expected to put enough energy behind the execution of their external treatment to make it successful. For these reasons the results of treatment for non-paying patients, such as relatives, friends, and members of compulsory health insurance plans, are, on the whole, much worse than in those who pay the normal fees."

The University of Chicago Press is to be congratulated for the exceptionally fine format, paper and photographic reproduction. Unfortunately the index is poorly organized, and the only mention of treatment for such conditions as psoriasis or pruritus is found, not under subject heading, but under the terms "antipsoriatics" and "antipruritics."

LT. COL. MORRIS H. SAFFRON, MC, USAR

THE CLOSED TREATMENT OF COMMON FRACTURES. 2nd Ed. By John Charnley, B.Sc., M.B., F.R.C.S., Orthopedic Surgeon, Manchester Royal Infirmary, England. 259 pages, illustrated. The Williams & Wilkins Co., Baltimore, exclusive U. S. Agents. 1957. Price \$10.00.

In this second edition of a classic piece of orthopedic literature, the author once again underlines the excellent results obtainable in most of the common fractures by well planned and executed conservative

measures. He warns, necessarily in this age of antibiotics and in this generation of enthusiastic surgeons who are relatively uninhibited by the spectre of sepsis, that there is a more cardinal contraindication to unbridled open reduction of fractures than sepsis. "The most pernicious danger of operative treatment is that it conceals under a cloak of modernity, of mechanical precision, and of operative simplicity, what is nothing less than the total devitalization of the bone and the inhibition of the biologic processes which result in the formation of callus."

His views on fracture repair and the proper mechanics of conservative treatment are succinctly presented in the first two chapters of this delightful book. He adheres to the precepts spelled out in those two chapters throughout the rest of the book as he discusses the commoner fractures to be met bone for bone.

The logic of presentation is above reproach, the style delightful, the professional acumen of the author exceptional, and the author's results of conservative management in even the most difficult of common fractures well nigh amazing at times. Here indeed is a postgraduate level "fracture book" that is a must for every surgeon who deals in musculo-skeletal system trauma whether it be an occasional or constant part of his practice.

LT. COL. DAVID C. KELSEY, USAF, MC

PRACTICAL NURSING TODAY. Attitudes—Knowledge—Skills. By Margaret C. Esau, Director, School of Practical Nursing, Y.W.C.A., Brooklyn, N.Y.; Barbara R. Fallon, Program Specialist, Practical Nurse Education, Dept. of Health, Education, and Welfare, Washington, D.C.; Kathryn Goodman Frentzos, Formerly Director School of Practical Nursing, Hospital for Joint Diseases, New York; Elisabeth C. Phillips, Executive Director, Visiting Nurse Service, Rochester, N.Y.; Eleanor A. Tourtillott, Coordinator of Nursing Education, Henry Ford Community College. 527 pages. G. P. Putnam's Son's, New York. 1957. Price \$5.95.

The practical nurse is assuming more importance in the care of the patient. There is no question about it. It is important, therefore, that she be better trained. And it is important that there be material for her training. Here is a book that answers the problem for the training of the practical nurse.

There are five parts: The Practical Nurse—Who She Is and What She Does; The Normal Body and How to Keep It Well; Today's Family; Common Illnesses; and Nursing Arts. Each part of the book is divided into chapters.

The book is well organized, the print is excellent, and the paper of good quality. It can be recommended to anyone interested in the field of practical nursing.

A. J. STEPHENS, R.N.

NEW AND NONOFFICIAL DRUGS. 1958. An annual publication issued under the direction and supervision of the Council on Drugs, American Medical Association. 645 pages. J. B. Lippincott Company, Philadelphia and Montreal. 1958. Price \$3.35.

This well known book needs no introduction to the medical and allied professions. The present volume has added 48 additional drugs with their descriptions; 9 drugs have been deleted because of their inclusion in the U. S. Pharmacopoeia, the National Formulary, or the National Dispensatory; 4 drugs have been omitted because of nonavailability in the United States.

Drugs listed in this book are those that have been approved as meeting certain standards set-up by the American Medical Association; the descriptions have been approved both by a board of experts and by the pharmaceutical companies.

The book is divided into sections each of which includes similar acting drugs giving chemical or biological names rather than trade names, although these appear at the end of the description of the drug.

Much time will be saved by the use of the very complete index rather than attempting at first to find the drug under a section of the book.

This is an important work which has made its reputation long before the present useful volume.

COL. R. E. BITNER, USA, RET.

OFFICE GASTROENTEROLOGY. By Albert F. R. Andersen, M.D., Clinical Professor Emeritus of Medicine, State University of New York College of Medicine, New York. 707 pages, 110 illustrations. W. B. Saunders Company, Philadelphia and London. Price \$14.00.

Mere words are inadequate to describe the success of the author in clearly and effectively crystallizing most of the practical knowledge of gastroenterology between the covers of one volume.

The lack of bibliography and multiple theoretical background presentations adds to the effectiveness of the book and makes it predominantly the author's experience. Certain exceptions, which are few, might be his strong emphasis of allergy and focal infections in relation to gastrointestinal disease, but this is only a matter of degree.

For the general practitioner, this book is a must as a rapid and excellent guide in the diagnosis and management of gastro-intestinal patients, especially in knowing the importance of further special study for better diagnosis.

The internist will find it a quick and enjoyable review of gastroenterology. Every sentence will ring a responsive chord in the heart of the gastroenterologist who has also labored in this division of medicine.

This book is a medical classic.

AUGUSTUS A. HALL, M.D.

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